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CIVIL INVESTIGATIVE DEMAND ISSUED PURSUANT TO THE ANTITRUST CIVIL PROCESS ACT, 15 U.S.C. 1311-1314 TO DETERMINE WHETHER THERE IS, HAS BEEN, OR MAY BE A VIOLATION OF SECTION 1 OF THE SHERMAN ACT, 15 U.S.C. 1

WITNESS: JOSEPH WANNA

DATE: NOVEMBER 15 & 16, 1995

REPORTER: ALICE J. BALLARD

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JOSEPH WANNA

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The testimony of JOSEPH WANNA, taken in the office of U. S. Department of Justice, 510 West Broadway, Louisville, Kentucky 40202, on November 15 and 16, 1995; said deposition taken pursuant to notice in accordance with the Kentucky Rules of Civil Procedure.

** ** ** ** **

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** ** ** **

JOSEPH WANNA,

having first been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. READ:

Q. Doctor, would you please state your name for the record?

A. Joseph Wanna.

Q. Where do you live?

Q. Let me introduce myself. I am John Read and this is Mark Sheridan and Nina Hale and we are antitrust investigators for the Department of Justice. You received a Civil Investigative Demand Number 13531 to appear here for a deposition. I take it you are represented by Steve Patton and Henry Oechler today?

A. Yes.

Q. Have you had your deposition taken before?

A. No.

Q. Have Mr. Patton and Mr. Oechler explained to you a deposition and what will take place today?

A. They explained, yes.

Q. And you are comfortable with

the procedures?

A. Yes, sir.

Q. Let me tell you that if you have any -- if you don't understand my question ask me to clarify it and I will do so. If you don't ask me to clarify it I will assume that you understood, is that clear?

A. Clear.

Q. Do you know of any reason today why you can't testify, any problems?

A. No.

Q. Let me begin by asking where did you go to college?

A. Undergraduate, you mean?

Q. Yes.

A. American University of Beirut.

Q. After the American University of Beirut where did you go?

A. I worked for one year or two years and then went to University of Iowa for my PhD.

Q. Did you graduate from the American University of Beirut?

A. Yes, with a bachelors degree.

Q. When did you graduate?

A. 1974.

Q. And what did you study at the University of Iowa?

A. I continued my education in Chemistry and got the PhD in Chemistry.

Q. When did you receive that PhD?

A. 1986.

Q. Did you continue schooling after that or is that the end of your schooling?

A. No, I did two post-doctoral periods of University of Rochester for two years and Colorado State University for two and a half approximately.

Q. Okay, what years were you at Rochester?

A. What years I was at Rochester, let me go back for the record. I finished 1982 my PhD, so 1976 to 1982 at Iowa, then '82 to 1984 at Rochester, and then '84 to 1987 at Colorado State.

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Q. And what were the titles of the degrees you got at Rochester and Colorado State?

A. They were not titles mainly after I did my PhD. As a postdoctor fellow you do further studies and to get into projects that the professor you work with he got grants for, mainly laser spectroscopy.

Q. Did that relate to combustion or fire in any way, ignition propensity?

A. Not really.

Q. What is involved in laser spectroscopy?

A. You look at certain molecules in the gas phase you shoot them into a molecular beam into vacuum, and you have a laser or two lasers exciting the molecules and you look at the emission from those molecules, and at some point you can knock off an electron and create a positive charge where you can detect it with a mass spec and look at that.

Q. And what does that tell you, why do you do that?

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A. Less academic studies some people would say no relative value, but it has value in the sense you understand that certain reactions at the molecular level, mainly look at some clusters and how they form with water. If you have one big molecule and you add another molecule of water, what happens, where does the molecule of water go. Let's look at benzine as an example. You have a water molecule. Does it go on the top or the side, and you have another molecule, how does it react with the other two molecules, that sort of thing. It's, you might say, reactions on the fundamental basis of chemistry.

Q. After Colorado State did you go to American Tobacco?

A. Yes.

Q. Why did you chose to work at American Tobacco?

A. I was looking for a job at the time and they offered me a job, sounded interesting project to work on, and we wanted to move to Virginia. I like that part of the country, so I came back.

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Q. What was the project you understood you would be working on?

A. Project related to ignition propensity work.

Q. What did they explain -- can you give me the details of the project as you understood at that time?

A. It was simply ignition propensity, that is what they told me. Ignition propensity.

Q. And I take it you left American Tobacco and went to Brown & Williamson at the time of the merger; is that right?

A. At the time of the merger they offered me to go down with Brown & Williamson to Macon. I accepted the offer.

Q. What was the name of your position while you were at American Tobacco?

A. Just before I left?

Q. Let's do it when you started.

A. I was research associate. I am not so sure, I can't recall the exact title, but something around the line of research

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associate. And when the merger took place I was a senior scientist.

Q. When you were a research associate who did you report to?

A. Initially I reported to Dr. Dallas Pinion.

Q. And did that stay constant throughout your time at American Tobacco?

A. No, it changed in 1989, I think, I don't recall the exact year. I reported to Dr. Chris Cook.

Q. Why did that change take place?

A. They promoted Chris Cook to assistant manager level and Dr. Dallas Pinion to manager level.

Q. So when you reported to Dallas Pinion he was an assistant manager?

A. Yes.

Q. And when you went to Brown & Williamson who did you -- what was your title at Brown & Williamson?

A. It is a long title, Senior Research Associate Chemist II -- no, I have to

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look at my card -- Senior Research Associate Chemist II.

Q. Is that a Roman Numeral II?

A. Yes.

Q. And who did you report to when you went to Brown & Williamson originally?

A. I reported to Chris Cook, Dr. Chris Cook.

Q. And is your title still the same at Brown & Williamson, Senior Research Associate Chemist II?

A. Yes.

Q. And you still report to Chris Cook?

A. Yes.

Q. During the time that you reported to Dallas Pinion when you were research associate at American Tobacco, what were your responsibilities in the area of ignition propensity?

A. Very wide question.

Q. Give me the broad strokes.

A. The board strokes of it is look at -- it was the initial time 1987 TSG

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report was just coming out. Part of my duties was to review it and work on product development for all products, and look at other ways to look at ignition propensity.

Q. Who did you work with when you worked on these projects of product development and ignition propensity. Who were your colleagues?

A. In the lab there was Bill Hudson and Linda Greear, G-R-E-E-A-R.

Q. Did you have any other colleagues who worked with you on ignition propensity during this time period when you were reporting to Dallas Pinion?

A. No.

Q. In the two years or so when you reported to Dallas Pinion, how much of your time was spent reviewing previous reports or articles on ignition propensity?

A. I came in as a scientist, give me a new project to go back and review the literature, and I would say the first maybe six months I reviewed literature from the TSG report and other publications in that area.

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Q. After that six-month period did you turn to product development work or was that at the same time you were reviewing the literature?

A. I would say there is no clear cut line, I'm done with the literature let's start product development work. When I was reviewing literature I was experimenting with different ideas what's going on, what should my next steps be, and maybe I started fiddling with some product development ideas or looking at some ways to look at ignition propensity.

Q. What were your assignments with regard to product development in that time period when you were reporting to Dallas Pinion?

A. The only thing that we had to work with was the TSG report, and so what we tried to do is try -- here is the TSG report and the government said they did this testing on these three mock-ups. And at the time American was doing some work with those mock-ups, not the exact three mock-ups, so what can we do in terms of our products, how they perform in those

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mock-ups. It doesn't mean that the TSG report was mandated as the correct approach or the wrong approach, but that was the only approach at the time.

Q. Were you asked to try and develop cigarettes that would perform well on these three mock-ups that American Tobacco was using at that time?

A. I don't know what you mean by perform well. We try different things and see how they outcome is. I wouldn't know this is well cigarette or this in not a good cigarette, because "well" was not well-defined and the TSG report has a lot of shortcomings in terms of the mock-ups. But initially I was still new on the learning curve so I was doing a lot of experimentation just to see how these fit together.

Q. Were you then only looking at how cigarettes -- how the cigarettes American Tobacco sold performed on these mock-ups or were you working to better the way they performed on these mock-ups?

A. I did not look at what

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American Tobacco was selling at the time. I was looking at what the TSG reported and claimed as these variables will produce allow IP cigarette. I took some of those variables, included them in one prototype and tested them on those three mock-ups and looked at the results.

Q. Is it fair to say, Dr. Wanna, that during that time period you were trying to learn what parameters you could change to the American Tobacco cigarette to help them perform better on the mock-ups that American Tobacco was using at that time?

A. A more accurate statement would be I was trying to learn what variables can be changed to get that effect, that result on those three mock-ups, that is all the three mock-ups we have, and how certain variables can be changed to affect the data.

Q. Where does Bill Hudson work now, is he with Brown & Williamson?

A. No, he works at another company.

Q. When did he leave -- did he

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leave from American Tobacco?

A. When the acquisition occurred, yes.

Q. Do you know where he went?

A. I don't recall the company name, no.

Q. Do you know where he lives, what city?

A. REDACTED

Q. And Linda Greer, does she work with Brown & Williamson now?

A. Yes.

Q. Do you know what her title is?

A. No.

Q. Does she work in the ignition propensity area?

A. Yes, she has other duties, too.

Q. So she still -- you still work with her in ignition propensity?

A. Yes.

Q. At the time that you were

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working in Product Development and reporting to Dallas Pinion, was it a goal of American Tobacco to develop a cigarette that would have a lower ignition propensity?

A. At the time there was no test method. There was no definition of what is in a low ignition propensity cigarette, should be or look like. All we had was a TSG report which I didn't think was a very well-based experiment to start with. But this is the TSG study, we found these variables that will tend to produce a low IP cigarette. All we did was try to change some of these variables, change them around and see what kind of results or data we get on those three mock-ups.

Q. I understand the difficulty of the project without a test, but my question is was it the goal of American Tobacco at this time to develop a cigarette that would be less likely to start fires or less likely to ignite soft upholstery?

A. I still don't agree with the way you're putting the question, were we trying to develop a product, because we didn't know

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what the product would meet, what criteria was there to meet. All we had was the TSG report. We didn't have a yardstick to say this is we're here now, it is a fire safe cigarette. I don't think we could claim that or say it.

Q. What value did you understand American Tobacco was getting for your services at this time?

A. The value of my work was there was NIST came up with the TSG report claiming these variables would tend to produce a low ignition propensity cigarette. My duty was to look at these variables on different prototypes and see what the results would be to final outcome using these three mock-ups, only on these three mock-ups, what kind of data can we get.

Q. I guess I understand what you did. My question is how does that -- how did you understand that that would help the company?

A. It is better understanding of the combustion process, what happens if you change certain variables to the cigarette. It

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is valuable information, that is why I looked at it.

Q. How did you understand the company would use that information to be more profitable?

A. I am not -- that's not my area. My area is I do the science and I report the science.

Q. At this time was American Tobacco trying to develop a test to measure ignition propensity?

A. What I tried to do, I was not looking at a test, I was finding what other means are there out there to try to define a test to look at this phenomenon. And, you know, that is why I looked at heat flux using a copper plate and infrared camera. Somebody would claim that these are secondary test methods. I look at them as other investigative tools to look at this ignition process.

MR. PATTON: You're focusing on this time period 1987, 198 when he first joined the company?

A. Right.

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Q. What did learning about heat flux and IR camera, how did those help you understand better ignition propensity?

A. Again it is a very broad question. Heat flux, when initially I started looking at it, I thought it is a good way to look at heat output from a cigarette coal. But later on it had its own difficulties and it is not a true measure of heat flux emitted from a cigarette. There are other meters you can use to measure heat flux from a cigarette. It is just one tool I thought of that could be useful at the time. The infrared camera provided information on the coal temperature and coal cross-sectional area.

Q. Was it your belief at the time that the lower the heat flux as a general rule, the less likely a cigarette would be to ignite a fabric?

A. At the time, during that time frame, initially I thought yes, if you have a cigarette that will have lower heat output so essentially it might cause less ignitions.

Q. Do you believe that today,

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as you sit here today?

A. No.

Q. Do you believe there is any correlation between heat flux and the likelihood of a cigarette igniting a fabric, as you sit here today?

A. Being a scientist there is always something that you look forward to, and I haven't seen a literature data correlation between heat flux and ignition propensity. Many people have tried to look at it, including NIST. As I sit now, I don't know. Unless I go back and do more work I cannot answer yes or no because I might be wrong either way.

(The requested portion of the record was read by the Court Reporter as follows: Answer: Being a scientist there is always something that you look forward to, and I haven't seen a literature data correlation between heat flux and ignition propensity. Many people have tried to look at --)

Q. Dr. Wanna, we just had the reporter read back your last question. Was there a word missing or was it accurately read

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back as to how you said it or do you want to repeat the answer?

A. I'll repeat the answer. Being a scientist, as I said, there is always hope you will find something in the future doing more work. But as of now I cannot -- I did not find a direct correlation between heat flux and ignition propensity. Now that is not saying that down the road somebody might have a better way of measuring heat flux, but as we measure it now, nobody was able to correlate the two together.

Q. When you use the word direct relationship, what did you mean?

A. Directly proportional. You measure heat flux and from the value you can interpret ignition propensity on fabric.

Q. Is there an indirect relationship?

A. I didn't say indirect. I don't know.

Q. That is my question. I don't know, either. As a scientist who has worked in this area, do you believe there is an

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indirect relationship?
A. There must be some kind of relationship. Now is it reversible proportional, the answer is maybe no, too. It might correlate to certain fabrics. You might test a cigarette on a certain set of fabrics and you find that heat flux may play a role in ignition propensity. You take the same cigarette, test another set of fabrics, and you find that heat flux is not affected one way or another.
Q. Let me make sure I understand. Is it correct to say then that on some fabrics heat flux makes a difference, on other fabrics it makes no difference?
A. Yes. If you take a fabric that is clean, has no potassium content or anything, you have no ignition. It doesn't make a difference what the heat flux of the cigarette is.
Q. Could you define exactly what you mean by heat flux?
A. Heat flux is the radiation emitted from a cigarette coal.

Q. How is that different from the temperature of the coal?
A. Radiation will take into account the temperature, the factor of the temperature and emissivity of the coal and maybe the size of coal. I think the size of the coal plays a role, so I haven't found it, you know, that is what I think. You are measuring two different things. What the heat flux, the substrate, the heat flux in the coal how far it is radiation-wise toward the surface is from the cigarette coal, how far is the substrate from the cigarette coal.
Q. What, Dr. Wanna, caused you to change your view that heat flux no longer is directly -- I think correlated is the word -- with ignition propensity?
A. As we did more work later years, we found the phenomenon called reversals on different substrates, and when I tried to correlate my heat flux measurements to ignition data from whatever I collected, there is no correlation. The data points were scattered all over the graph, so that tells you there is a

poor correlation.
Q. How large was your sample size when you talk about the data points being scattered?
A. This work was done early on in '87 or '88, I don't recall but more than a hundred, maybe.
Q. Can you explain to me as a layman how if heat flux is correlated with ignition propensity on some fabrics, and how if it isn't correlated on other fabrics, if you sum both sets of fabrics together why there isn't some correlation still, although a weaker correlation between heat flux and ignition propensity?
A. I didn't say there was no correlation. There may be some correlation. I don't know the exact correlation, okay, there may be. As I explained earlier, some fabrics that have no potassium content, they don't ignite. It doesn't make a difference what the cigarette heat flux output is, it is not going to ignite. Now you look at whole data set, you might find a weak correlation to heat flux, but

I have not seen it before me. I don't know if it has it, maybe some people correlated it, but I haven't seen it. As far as I know I didn't see it.
Q. The other thing you talked about was infrared --
A. Camera.
Q. What was that intended to measure in a cigarette?
A. It is a device that measures the temperature, looks at -- sees the coal and it measures the radiation, hot versus cold, and it measures the temperature of the cigarette coal.
Q. Okay. And again at that time did you believe that the temperature correlated with ignition propensity?
A. Not really. I thought it could be that the temperature and the coal area are or a cross-sectional area might correlate to the ignition propensity. Initial thoughts, 1988.
Q. And what is your current belief?

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A. Still I don't think there is any direct correlation from that. I found that the temperature and cross-sectional area may be correlated a little bit to the heat flux measure on the copper plate, but no correlation to the ignition propensity obtained from the mock-ups we were testing at the time.

Q. When did you come to the conclusion that heat flux and the infrared camera -- did you come to the conclusion that heat flux and the infrared camera were not particularly helpful in the ignition propensity area?

A. I don't know what you mean by particularly helpful. I found there is no correlation to ignition data.

Q. When did you come to the conclusion there was no correlation?

A. Also again it was, you know, '89, maybe, or something. I would have to go back and look at my documents.

Q. Did you come to that conclusion then before you had talked with anyone from any other companies, any other

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cigarette companies about ignition propensity?

A. This was internal company work. I did it on my own.

Q. At that time it was based on your internal work. Was it also based on review of literature?

A. Review of the literature revealed that heat flux was not correlated to ignition propensity. The NIST TSG report of 1987 said there is no heat flux correlation to ignition propensity, and my work showed it, so I concluded it is not.

Q. When you came to that conclusion what did you do next?

A. I might have still worked on measuring heat flux on a copper plate and used the IR camera, but then we started directing our experiments to we were looking at other fabrics. That was then time was maybe 1990 or '91.

Q. Is it fair to say that about this 1989 time frame you turned from looking at heat flux to mock-ups?

A. There is no clear cut line

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or black and white line, okay, I am going to stop looking at this and switch to this. It was all a learning curve and there is no clear cut dates when I stopped something and started another thing. As you learn you evolve to doing different things. You don't let go easily of what you did before, but you start doing other things. We started looking at different mock-ups at the time and then the TAG was formed in 1990 and Joint Venture was formed and we started looking at different CORESTA work and it all revealed for us a lot of new avenues to look for -- go down.

Q. Can you describe for me in general what your work was when you reported to Chris Cook at American Tobacco, and particularly could you explain any differences with how it was when you were reporting to Dallas Pinion?

A. Basically my work continued, no difference.

Q. In the areas you researched were there any differences, any projects that were different?

A. No, I continued on the

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same. My responsibilities did not change from when I was reporting to Dallas and then Chris. Responsibilities stayed the same.

Q. Did you give less emphasis during that time period, this is when you reported to Chris Cook, did you give less emphasis to heat flux and infrared camera?

A. During that time when I was reporting to Chris Cook, I might have still looked at heat flux and infrared camera, but my learning curve I expanded, I was looking at -- involved in different things, but my responsibilities remained the same.

Q. Can you enumerate some of those different things you began to look at?

A. We were involved with CORESTA work, the Joint Venture work, some of those areas, looking at air flow effects -- you want me to go down to the end of 1995?

Q. Let's just say with American Tobacco.

A. Then with American Tobacco we looked at air flow effects, I mentioned that, and then we started looking at when the duck

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variability, duck fabric variability, ruggedness test of the duck fabrics, we looked at foam variability, we looked at used soiled fabrics, and I started looking at smolder rate of fabrics as related to ignition propensity, and fabric effects, commercial fabric surveys, basically.

Q. Earlier in your answer you began with CORESTA work and Joint Venture work, and then you enumerated more specific projects. Did you consider those projects like air flow, duck variability, foam variability, used soiled fabrics, smolder rate and fabric effects, did you consider those to be CORESTA work or Joint Venture work?

A. They might be lumped -- I think they're all maybe lump sum together. You want to break them down?

Q. I am not sure if I understand what you mean by lump sum together.

A. All of these projects we worked on at American Tobacco. Some of them may be related to CORESTA work, some of them to Joint Venture work.

Q. Were any of them something

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you would call exclusive proprietary American Tobacco work?

A. From the ones I listed, not really, I can't think so.

Q. These were all either done to share with CORESTA or Joint Venture?

A. Yes.

Q. Let's turn to CORESTA and mark Exhibit 1.

(Wanna Exhibit 1 was marked for identification.)

Q. If you will turn to page 5 of Exhibit 1.

MR. PATTON: Can I make a suggestion. Can we call these Wanna Exhibit 1. Otherwise we are going to wind up with a whole lot of Exhibit 1's.

Q. Can you turn to page 5 of Wanna Exhibit 1?

A. Yes.

Q. In the cc line there is JTW, are those your initials?

A. Yes.

Q. Do you recall having seen

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this document before?

A. Yes, I have seen it.

Q. After your initials there is a slash and then LCG and slash WZH?

A. Linda Greer and Bill Hudson.

Q. Did each of you get a copy of this document or is this document routed?

A. No, routed.

Q. That is what the slashes mean in the cc?

A. Yes.

Q. Let me ask you, what is your understanding of who was involved in forming the CORESTA Task Forces?

A. That I cannot answer, I don't know.

Q. Did you ever hear whose idea it was?

A. I don't know, no.

Q. Do you know if John Ruff was involved in the formation of the Task Force?

A. As I said before, I don't know who.

Q. Turning to page 2 of Wanna

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Exhibit 1, Bates stamped AT 24842. Would you read the paragraph entitled Task Force Objective to yourself and tell me if that accurately reflects what you understand to be the purpose of the CORESTA Task Force?

A. Okay.

Q. Does that accurately reflect the purpose of the CORESTA Task Force as you understand it?

A. I don't recall exact words of the CORESTA Task Force. I don't know if I have seen it. So I don't know if this correlates to the wording of the CORESTA Task Force mandate. I can't say yes or no.

Q. As the Task Force has operated and practiced and as you have observed it, to the extent that you have observed it, is that objective an accurate description of how the Task Force is operated?

A. I understand the Task Force objective was to develop a test method, so that's the extent of the Task Force. I was not very active in the CORESTA Task Force, so I have not seen the exact wording or I don't recall it,

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so I cannot answer that as to yes or no, was it exact imaging of it.

Q. The last sentence of that paragraph, "If we do not do something, someone else will do it for us." Was it a concern of the American Tobacco Company that if the industry didn't develop a Task Force -- or if the industry didn't develop a test method, someone else would do it?

A. I am not sure what he is referring to here or what he means. I don't know, I just read it now.

Q. At that time who was American Tobacco worried might develop a test for the industry with regard to ignition propensity?

A. I don't know what you mean American Tobacco was worried. As I said, I don't know who they refer to. And whoever wrote this, I don't know what he referred to or what he meant by that.

Q. In your discussions with your colleagues at American Tobacco was there ever any conversation as to if we don't come up

with a test method, someone else will?

A. No, we never discussed that.

Q. Do you know what harm there would be to either the industry or American Tobacco if someone else other than the industry or American Tobacco came up with a test method?

A. I don't know, it is just speculation. I don't know, I can't speculate.

Q. Would your speculation be based on conversations with others?

A. No, I didn't discuss who else might be developing a test method at the time, and it was 1989, so -- I was doing my work in the lab, scientific issues basically. It just came across my desk, this document.

Q. Perhaps the paragraph above might help. It is the third dash down on page 2 of Wanna Exhibit 1. Some new bills which are now pending in Congress and some state bills; suggested vouchers bill should be supported by the industry since there is so much state activity and his is the most fair to the industry. At this time was the industry worried about the government coming up with developing a

test method.

MR. PATTON: Objection, lack of foundation.

Q. If you know.

A. I can't answer that.

Q. You don't know, is the answer?

A. Objected, so --

MR. PATTON: You can go ahead and answer even though I object. In fact, you should answer.

A. Nothing I can say.

Q. Let me rephrase it and see if we can address it again. Did you have any understanding that in 1989 either American Tobacco was concerned that if either they or the industry didn't develop a test method, the government would?

A. As I said before, I was not involved in -- I think this report, I was in the lab doing my science behind the TSG report and that's it.

Q. Did you ever come to an understanding that the industry felt, or

American Tobacco felt, that it would be disadvantaged or harmed if the government developed a test rather than the industry or American Tobacco?

A. You are putting industry and American Tobacco -- I don't know what the industry thinks, I'm not involved with the industry.

Q. I will separate it out. Did you ever come to understand that American Tobacco would be disadvantaged if the government developed a test method as opposed to the industry?

A. I repeat the same thing. At the time I was not involved in the question who was going to develop a test method or how it was going to affect American Tobacco. At that time I was purely a scientist, still a scientist working on the -- looking at the ignition propensity aspect and the effects of different variables.

Q. After this 1989 time frame did you ever come to understand the industry might be disadvantaged if somebody else

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developed a test?
A. I still didn't discuss it with anybody or think about it. I was just concerned with the science, that is it.
Q. And this is true all the way up to the present day?
A. Yes, all the way up.
Q. Did you in this 1989 time frame have any understanding of what the effect on American Tobacco would be of legislation in the ignition propensity area?
A. No, I didn't think about it.
Q. When you read this exhibit, Wanna Exhibit 1, when it was circulated and you read about the bills in Congress and the state bills, did you think about how that would affect American Tobacco?
A. No, I didn't think about it.
Q. Did you ever talk to your colleagues about how that might affect American Tobacco?
A. I don't recall whether I talked to them or not. It was 1989, I don't recall everything about that.

Q. Do you ever recall them talking to you with regard to the effect of legislation?
MR. PATTON: In 1989?
A. I can't recall whether they mentioned it or what.
Q. Did you ever think about how legislation would affect the work you were doing at American Tobacco?
A. No, I didn't think about it. I didn't think about it. I did not, no.
Q. You did not think about it?
A. No.
MR. PATTON: Again, we are talking in the 1989 time period.
Q. Did you, when you received Exhibit 1 or in that time period right around when you received Exhibit 1, did you think about or discuss with anyone how likely legislation in the ignition propensity area would be?
A. I can't recall if we talked about it.
Q. Under the heading of Present Methodology on page 2, the second sentence

reads, "There was considerable discussion about this method," referring back to the UFAC method or Damant's or Krasney's method, "with recognition of ignition as a big question." Is it fair to say that at that time there was a concern about how you defined when ignition took place?
MR. PATTON: You are saying generally. He was not at this meeting.
MR. READ: Fair enough. Step away from the document. Is it fair to say that in this time frame of 1989 there was some concern about how you would define what was and wasn't an ignition?
A. Separate from the document there is always concern what you define ignition. Up to now there is still a question as how to define ignition and not ignition, in my mind, up to date.
Q. So that is something that has not been solved?
A. In my opinion it has not been solved, no.
Q. Has either – has the Joint

Venture, to your knowledge, put forth any ideas on how to solve that problem?
A. I can't recall if we came up with ideas or not.
MR. PATTON: Do you know what problem he is referring to by how you define ignition. Do you mean practically what that means, the difficulties involved?
MR. READ: Like how big a smolder is or —
MR. PATTON: How far it goes before it stops, what if it goes 7 millimeters and then it stops, what if it continues and stops. Yes, is 10 millimeters an ignition, is 5 millimeters?
A. Yes.
Q. In your ignition test now, do you use a definition of ignition that was developed by NIST?
A. Yes.
Q. Does the Joint Venture or do you personally, either one, have a problem with this NIST definition of ignition currently?
A. I can't speak for the Joint

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Venture. For myself, you know, the 10-millimeter definition of ignition I don't know what is the basis. There is no report on what basis was the 10-millimeter defined as an ignition or not an ignition. There is no foundation or reference to any other more work. Why pick up 10 millimeters.

Q. I neglected to ask you earlier, do you still attend the Joint Venture meetings?

A. Yes, occasionally, unless I'm busy or out of town.

Q. When was the last time you attended?

A. Maybe in June.

Q. Up until June to your knowledge the Joint Venture has put forth no alternative definition of ignition; is that correct?

A. I don't recall if we suggested something or not, I can't recall that.

Q. Further down on the page under the heading Conclusions, there are a number of points followed by dashes. Actually

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let's turn to the page Bates stamped 24867 of Exhibit 1. If you could turn one page earlier so we are now looking at page AT 24866, Attachment 4 to Wanna Exhibit 1. The heading is Problems with the Current Method. I take it, Dr. Wanna, these were, and tell me if your understanding is different, that these were some of the problems that the CORESTA Task Force members had with current test method development back in this time frame?

A. I was not at the meeting. I don't recall, or I don't know what they –

Q. Listed as the 7th point is relevance to real world as a problem. Do you see that?

A. Yes.

Q. Was that a problem that you had already encountered in the lab?

A. 1989, whether I personally encountered this in the lab?

Q. Yes.

A. Personally I thought about it in the lab when I was looking at the whole ignition propensity issue.

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Q. Was this a problem that you would have agreed with back then or would have come up with?

A. As I said, I was not at the meeting so I don't know who came up with those issues. But at the time personally I thought it is a relevant issue.

Q. When you read this document back in 1989, were there any problems listed here that you had not thought of at that time?

MR. PATTON: Any problems with what, John?

MR. READ: With the current methods of the day.

MR. PATTON: That is pretty ill-defined, and he says he is not sure what method they're talking about here. I can make some assumptions, they'd probably be the same ones that you would, but I am not sure he agrees with that. If you can be more specific, for example, the three mock-ups, the TSG report or something like that.

Q. Would these items listed in Attachment 4 of Wanna Exhibit 1, would any of

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these problems to the – be problems that you would have not thought of in relation to the TSG method?

A. Relevant to the TSG method?

Q. Yes.

A. Compared to when I read these in 1989, I found other shortcomings in the TSG method.

Q. In addition to these?

A. I must say I can't recall whether it is in addition to this, but I found other problems, maybe certainly in addition to this now that I see them, there is air flow effects, not well-defined conditions about air flow, or mock-up and enclosure, few replicates on the TSG test method, their choice of fabric on the TSG, those are some of the things that I think about.

Q. Turning the page to Attachment 5 of Wanna Exhibit 1, do you know why relevance to real world is not listed as a requirement of a viable test method. I know you weren't at the meeting, but did you ever have any conversation that might shed light on that?

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A. I can't recall.
Q. Of these problems with the TSG method listed on Attachment 4, which of these have been in your mind solved either by the NIST method or by the Joint Venture in its work?
A. You are talking about the TSG work?
Q. Let me restate the question. The problems listed on Attachment 4 that I understand went to the TSG method, which of these problems have been solved either in the NIST -- the current NIST method or by the Joint Venture?
A. It is a broad comparison. There is a lot of shortcomings to the TSG. I think the TSG work, the experiment has been done. You cannot go back and fix something that is not to start with is not good in the beginning. To me A better approach is to start on a fresh basis and start developing a test method.
Q. I understand. Let me ask this. Would you say that the NIST test method

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still has a problem in variation in fabrics and substrates?
A. Yes.
Q. Would you say the NIST method still has a problem with conditions not being defined?
A. Yes.
Q. Would you say the NIST test still has a problem with a subjective end point?
A. I don't understand what subjective end point means.
Q. So you don't understand that?
A. No.
Q. Do you believe the NIST method still has a problem with self-extinguishment?
A. In my opinion, yes, yes.
Q. Does the NIST test method have a problem with lack of sensitivity?
A. Yes.
Q. Does the NIST test method have a problem with choice of fabric and substrate?

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A. Yes, it does.
Q. And --
A. Relevance to the real world. I think definitely it has a problem with relevance to the real world. And test procedures not defined, I know what they mean by that. It needs more definitions there. Time required on significant number of tests, I am not a statistician so I cannot answer to that.
Q. So the last one you are not sure whether that is a problem currently or not?
A. I am not a statistician so I cannot address it.
Q. Which of these problems has the Joint Venture or the CORESTA Task Force found a solution to?
A. In my opinion the test method is not a piecemeal that you put together, fix one problem, okay, let's go on. You have to understand the whole process of ignition propensity, and once you develop a full understanding of it, then you come up with a test method. You have to account for all the variables that come in and account for them.

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Then you have a valid test method, once you account for all the variables that are out there, and still we're working on that.
You might look at the Joint Venture and they look at different areas like what fabrics are they, how do they behave. Look the air flow effects, do we address these issues, these problems, we try to address them, how they impact an ignition test method, and how they -- whether they should be included in the test method. That is what the issues we are addressing.
Q. If you were starting fresh, how would you develop an ignition test method knowing what you know today?
A. That's a very broad question. How about doing it. There is a lot of variables that are out there that I can't personally think of. Some other scientists might say there's more variables or this one is not important or that one is not important. So I cannot really sit down and speculate what a test method would be like or should be like. I know there is certain variables that should be

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in there, maybe there is others like air flow, real world relevance, you have to talk to a statistician to answer certain other questions on sensitivity or reproducibility, and there are other factors that should be included.

Q. If you are starting from scratch what would be the step by step things you would do to develop a test?

A. If you are addressing a scientific problem there is no manual saying here is the steps or recipe you follow to solve the problem. You do experimentation and you learn certain things. After you learn them, then you either change things do other experiments or modify other things to learn more. But if there is a recipe everybody can follow it and come up with something. So it is not an easy thing, here is step one, step two, step three.

Q. Based on the experiments that have been done to date and the knowledge that has been generated to date, what would be the next step you would take in developing a test method?

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A. I speak as a scientist on my own. There is other things, many other things that have to be considered. Air flow effects on real world fabrics, real world fabric distribution, and foam and the substrate is very important section, and configuration of the test method, crevice versus flat. These are not to be limiting myself, these are something that in the immediate future I would be tempted to look at or examine and see the effects.

Q. As you sit here today do you have an idea of what a valid and reproducible test would look like?

A. I don't think I can visualize it clear in my head what it should look like. I can visualize what it might include in the future. Those things I mentioned, configuration, substrate, fabric presentation, real world distribution, air flow effects, environmental effects, humidity effects, these have been to be considered in a test method to be valid for a real world test method.

Q. Do you have enough – is

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there enough learning now to know which substrate you would use in a test method that would be valid and reproducible, or substrates, if it is plural?

A. The Joint Venture performed a fabric survey, and we are not sure whether it is representative of all the fabrics out there. The fabric industry was not cooperative in supplying a data base. I don't know if there is a data base. We have not seen any data base about the fabric distribution in terms of weight, of porosity, die effects and that thing. So as the Joint Venture constantly we are looking at from the knowledge we accumulated in 500 and 300-fabric surveys, we were looking into locating five fabrics that span a weight range and permeability range.

(A discussion was held off the record.)

Q. Can you describe for me, Dr. Wanna, the five fabrics the Joint Venture is looking at?

A. We decided as a Joint Venture that they should be plain weave, simple fabrics that any mill can go to them and should

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be able to weave it, they should be clean of potassium and sodium cations in general, because these are what cause ignitions, and they should span a weight range from 6 to, I think, about 21 ounces, should have certain permeability.

Q. Would it be a high or a low permeability or would it range?

A. It would be reversely proportional to the weight, so as the weight increases the permeability will go down.

Q. Why?

A. Usually the heavier fabrics or tightly knit so less air would go through them, and so we tried to talk to the mills here. As usual they would not cooperate to weave those fabrics for us, so we went overseas, maybe we have better luck finding or locating them, better cooperate to weave the fabrics for us.

Q. Let me come back to this step you would take to develop a test. Would you use these five substrates that the Joint Venture is having produced?

A. The idea about hunting for

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these fabrics is to go back and treat them with certain levels of potassium and then use them over foam, try to create a -- see how they break up the ignition propensity, if they break up. It is an experiment from a new approach, we are trying that. The first step is to locate the fabrics, which we are having difficulty doing.

Q. So the idea is you would take fabric A and on one set of fabric A have no potassium and the next set of fabric A have 1,000 grams or whatever the right parts per million, and the next one have 2,000 parts per million, and then see at what point a cigarette lights the fabric A?

A. We have not defined up to now where the treatment levels are, what the experiment will look like, but the first issue on the table is find the fabrics. So we are trying hard to look at mills that will make the fabrics for us.

Q. Tell me if I am wrong, the reason you are finding these fabrics is so you can put different varying amounts of potassium on them to see at what point the fabric would be

ignitable by a cigarette?

A. Once we get the fabrics we'll treat them with potassium, different levels, and then we have to define what configuration to test them and see what we have got.

Q. And the idea would be a cigarette that ignites it at a lower level of potassium is not as good as a cigarette that lights it at a higher level of potassium?

A. You are going forward too much. We have not thought this far ahead, what the outcome or what the -- what you are looking for. But initially we are looking for fabrics, treating them with potassium levels. Once we do those two steps, then we go to the third step is define a configuration, and air flow effect has to come in later on. So some steps we have to follow to come up with -- define the experiment

(A discussion was held off the record.)

(Break.)

Q. We took a break and had a discussion off the record about the potassium levels of the five fabrics. Could you tell me,

Dr. Wanna, how many levels of potassium will be given to each fabric, has that been determined?

A. It has not been determined yet.

Q. Has it been determined what would be the purpose of testing the cigarettes on each of these fabrics with the multiple potassium levels?

A. Could you repeat that?

Q. What would be the purpose of that testing. What would be the -- what would you would be trying to learn and understand?

A. The ultimate goal is to develop a test method, and this one step in that process of understanding how the cigarette and fabric interact in an ignition scenario, what happens to that interaction.

Q. What specifically do you expect to learn new that you don't know already?

A. I haven't thought about what we will learn new. Myself, I have not done that. What I expect to learn is if you had five weight levels and five permeability levels that are well-defined, and if you take certain levels

of potassium and you test them in different configurations or with air flow, that will shed light on the interaction, cigarette fabric interaction.

Q. Can you be more specific as to what light would be shed?

A. The ignition process is a fairly complicated one. There's a lot of facets and aspects of it that we think we understand but we're trying through this experiment to shed certain light. Myself, I am doing an experiment on smolder rate of fabrics, I think it is in my opinion is fairly promising, looking at smolder rate of fabrics, and how does that affect ignitability.

Q. What would be the hypothesis of this testing of the five fabrics with varying levels of potassium?

A. I haven't seen a hypothesis behind it of the experiment behind the five fabrics. It is an idea that if you come up with these fabrics and treat them with the potassium levels and test them in different configurations but it's not been defined yet, and see what the

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outcome might show us, is this away to go, I don't know.

Q. Would you expect one of these fabrics with the potassium to be the substrate you do future mock-up testing on to be the test fabric?

A. Knob really – I can't recall anybody mentioning that, but in my opinion I think one substrate and one, you know, potassium level is going to be the – consist of the test method. It might include multi-fabrics, multi-postassium levels, different configurations and air flow, certainly, maybe some other variables we are not aware of. This experiment basically is one of the experiments that the Joint Venture has been embarking on to clarify this image and clear up the picture of ignition process and try to understand the fundamental basis.

If you start up with clean fabrics, all along we have been using either fabrics collected from stores. When you go back to buy them, that is it, you can't buy them anymore, it's a one-time thing. So our idea is

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if we come up with clean fabrics that we describe the physical parameters, and we go to a mill to make them, that is an accomplishment by itself, just to be able to go out year after year and buy the same fabric with the same characteristics, because NIST claims duck fabrics are produced year after year, and sure enough, one month or two months after they issue the report, we cannot buy duck fabrics anymore. Whatever we buy is not reproducible, doesn't give you the same result what NIST got. So I mean, it is an accomplishment by itself to be able to locate those fabrics and an affirmative response from the manufacturer to produce them year in and year out. This is a big accomplishment which nobody has done before.

Q. You said something that I found curious and I want to make sure I understood it right, and that is it's your understanding that none of these five fabrics will be the – are expected to be the ultimate test fabric?

A. I didn't say they would not be the test fabric. I am not saying one, maybe

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five, maybe after we do the experiment we need to expand the range more, I don't know. But the primary issue is can we obtain fabrics that are reproducible, and once we cross that bridge we'll go on.

Q. Let me restate my question. Is it correct that you have not heard anybody say that it is expected that one or more of these five fabrics will be the test fabric that the Joint Venture will ultimately come up with?

A. I don't recall hearing any of that discussion.

Q. Is it fair to say that in developing a test method the first step would be find the right fabric?

A. My opinion, it will be the first step.

Q. Okay, and then a later step would be choose the correct configuration, correct?

A. I don't know whether a later step or intermediate, but certainly the variables how important they are, I don't know until further testing is done, being

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configuration, certainly the substrate you put the fabric on is very important, because foam as it is now, I cannot by the foam. You cannot buy it anymore, the company told me. So there is the configuration, the substrate, the air flow effects. Now I cannot sit and prioritize which one is more important than the other.

Q. There is at least two configurations I know of. There is a flat configuration where you just put a cigarette on a flat surface, and there is the L configuration or crevice, where you put a cigarette in a crevice. Has a Joint Venture settled on a configuration that it prefers or it thinks is most appropriate?

A. We are still experimenting with this issue, still under consideration. We have not decided which one is more important. Or some other configuration maybe later on might need to take a look at.

Q. What more do you need to know in order to settle on the appropriate configuration?

A. We have not done the testing

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yet on the crevice versus the flat. We did some preliminary work at Brown & Williamson. I am in the process now of looking at more fabrics and setting up the experiment.

Q. You discussed foam as being a variable. Has the Joint Venture decided on or can it yet decide on the type and size of foam that would be under an appropriate test?

A. No, they have not decided so far what foam to use, but we know foam is a variable, big variable that has a large influence on the test outcome, and that issue needs to be looked into.

Q. Can it be looked into before you decide on the substrate or do you need to know the substrate before you can look into it. Fabric is – let me rephrase the question. Can you determine the appropriate size and type of foam without knowing the fabric, or do you need to know the fabric first?

A. What currently I know is that foam is a variable and it is different with different fabrics. And so I cannot tell you whether you have to chose the foam first or the

fabric first, but once we find those five fabrics with the well-characterized characteristics, the physical properties, we'll look into different foams. But it doesn't mean we'll look at different suppliers. Actually now I am looking at different foam suppliers, calling them up to get different foams.

Q. I didn't understand. Is it possible to work on foam before you are settled on substrate. Is it – not possible, is it advantageous?

A. I don't think so. I mean, the way I am looking at it we'll approach both problems.

Q. Simultaneously?

A. We are trying to find a foam supplier that has well-characterized foam that can be reproducible over time without changing all of a sudden.

Q. Is foam the type of a variable that can cause reversals or does it only change the quantity of ignitions but not without changing the ranking of cigarettes?

A. That is an interesting

phenomenon I have not looked into, but maybe I'll go back and check into it, I don't know. It could.

Q. It could cause reversals?

A. I am not looking at it that way before, but it might. That is an interesting point.

Q. What about configuration. Is that, between flat and crevice, is that something that causes reversals or is that just changing the quantity of ignitions without changing the ranking?

A. The preliminary work I have done so far, you see differences between flat and crevice. You might call it reversals if you defined reversals by moving around ranking or shifting around cigarette rankings. There are differences, yes.

Q. So let me be clear. You have seen that in a flat configuration one cigarette may do better than another, and in the L configuration, that would be reversed?

A. Preliminary work indicates you find differences, yes. These are

preliminary data few replicates, few fabrics. This work is constantly we are doing it. I cannot be saying either way, but indications indicates, yes, there are differences.

Q. Are the differences significant or are they minor?

A. No, in my opinion they're significant.

Q. Can you tell me what – how would you define significant?

A. One set gives you zeros and one configuration gives you 8 out 8 ignitions, and in my opinion that is significant. Now if I talk to statistician, he might tell me you need a lot of replicas and well-defined experiments, which I agree with him, but these are preliminary data that I have seen. In my opinion it shows me there is something there to look for.

Q. Are there reversals you have seen, are they common and significant?

A. What do you mean by common and significant?

Q. As opposed to rare.

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MR. PATTON: Frequent.
MR. READ: Yes, frequent.
A. I cannot still judge that. That is still preliminary work, but I have seen enough data and evidence to pursue it further, and so we are planning further work on it, and CORESTA is pursuing it, too.
Q. The reversals are they among prototypes that are at the extreme ends of high or low, or are they among cigarettes that are more mid-range?
A. I can't recall the data. I don't know.
Q. Do you recall what types of cigarettes you were testing?
A. They were TSG-type cigarettes. I don't know where they -- I don't recall where they fit in the scale.
Q. Has the Joint Venture settled on how it would account for air flow in a test?
A. I don't recall a discussion on how the final test method would look like and how would air flow fit into it. I said the

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preliminary steps in finding those fabrics, and we'll come to that issue as we go along.
Q. Let me ask the same thing for humidity. Has the Joint Venture addressed how it would account for humidity?
A. Same answer. We know humidity plays a role but we have not really found it.
Q. Is humidity a variable that causes reversals?
A. What I have seen, the data I have seen indicates not. It indicate it shifts it up or down.
Q. Based on that, that would be a variable that would be of lesser concern than some of these others; is that correct, some of these other variables that cause reversals?
A. It would be of concern, whether lesser, I cannot judge that. It would be of concern how humidity we're testing and how relevant it is to actual humidity you have outside.
Q. Do you know of any timetable in the Joint Venture for when it plans to or

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expects to come forward with a test?
A. I don't recall a discussion of any timetable. To put a timetable on a test method is kind of difficult unless you explore the possibilities and the variables out there, like locating the fabrics is becoming a lot of time consuming.
Q. Is there a timetable for this research involving the five fabrics and the potassium that would be put on them?
A. The answer is also I can't recall a timetable.
Q. Are you ever frustrated by the pace of the Joint Venture to develop a test method?
A. Personally, no, I am not frustrated as long as there is progress. The words is always some of the issue. I am happy as long as there is progress and pushing forward. I become frustrated when we're really stagnated, we're not doing any experiments or exploring new ideas, yes, then you might become frustrated. But now I think we are doing pushing ahead forward and exploring new

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territory and new ideas.
Q. How would you measure the progress that the Joint Venture has had with regard to test method development?
A. I don't know by what yardstick. I think they've made significant progress and they shed a lot of light on a lot of issues that were disregarded or not looked at by whether NIST or UFAC or many of the people who have certain test methods floating out there.
Q. You used the word "stagnated" a couple of answers back. Have there been any times when you felt the Joint Venture was stagnated and not progressing?
A. I don't recall any.
Q. Is it fair to say that the progress has principally been in learning more and understanding more of the fundamentals of ignition propensity, is that principally the progress that the Joint Venture has had?
A. Principally, you might say understand the fundamentals, and a broader picture comes to mind, too, you know, in terms

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of when we had the fabric survey. It was a broad picture of what is out there, how does it flap. And we are doing fundamental also, on a fundamental basis when I mentioned smolder rate experiments.

Q. What is the purpose of doing the smolder rate experiments. These are smolder rates on fabrics, right?

A. Yes.

Q. What is the purpose?

A. I try to understand the phenomenon of reversals, and I thought that one variable that nobody has really looked at was fabric smolder rate. And if you take a fabric and you ignite it, whatever means you use, it has a certain smolder rate. And each fabric, depending on its weight and cation content, has a certain smolder rate. And it is interesting, I found, it might correlate to linear burn rate of the cigarette, meaning if you have a fast fabric smolder rate and a fast linear burn rate cigarette, you might end up with ignition. And if a slow fabric smolder rate and a slow linear burn rate of the cigarette, you might have

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ignition, too.

But if you reverse the phenomenon, if you have a fast smolder rate on the fabric and a slow linear burn rate cigarette, you might have no ignition. So it is an interesting phenomenon with the initial experiments on it, and it seems to me there is something there to look into and we are further testing it. And certainly air flow played a big part on it because air flow might speed up the smolder rate of the fabric or the cigarette and might change that correlation.

Q. What facts would you expect to learn from these smolder rate experiments that you would incorporate into a test that was valid and reproducible?

A. I have not thought that far ahead. What I am thinking about is understanding the phenomenon initially, how does that correlation occur and why. And understand the smolder rate of the fabric, is it affected more by the weight of the fabric or the cation content. Certainly once we understand the smolder rate of the fabric, how it is affected

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by cation level or weight, and if you know the linear burn of the cigarette, you might come to predict what the outcome would be. How would that place into a test method, I cannot right now sitting here tell you how it is going to fit in. But it is one of the pieces of the puzzle that would shed more understanding and enlightenment on a scientific fact I am interested in, and I assume the Joint Venture would be interested in knowing the outcome.

Q. Is your goal to develop a test that would measure ignition propensity?

A. Yes.

Q. If that is your goal, why are you working on understanding the smolder rates of fabrics where you are not as clear how that would be applied to a test when there are other areas of research, such as choosing the fabric, that are directly applicable to building a test?

A. I didn't say we are not working on that issue. We are working on mainly trying to find the fabric. But there is a phenomenon of reversals, and if we are capable

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of understanding how it occurs and why it occurs, I think it will shed more light towards developing a real valid test method. I think it is one piece of the puzzle that could be a major piece. If you know why reversals occur, nobody now even explains why reversals occur because they're there.

I am trying to come down and say why this phenomenon happens, maybe not at the real fundamental level, but at a different viewpoint, a different angle that would shed light on those reversals. And I said it might end up helping in the test method and might be incorporated in the test method in the type of fabrics you chose, the cation content you chose, and I think it could be valuable.

When you do science you don't know what to expect. It might have an impact, it might not have an impact. But you cannot just ignore it and say I am going to put this issue on the side, I'm not going to look at it, because you could come back later on to find that it was an important issue that you ignored.

Q. Chris Cook knows you are

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working on the smolder rates of fabrics, correct?

MR. PATTON: The only problem I have with that, John, is it's a relationship between linear burn rate of the cigarette and smolder rate of the fabric. Do you see what he is saying?

MR. READ: Yes, I understand that.

Q. Let me ask you again. Does Chris Cook know that you are investigating this relationship between linear burn rate and the smolder rate of fabric?

A. Yes, I report to him and he knows what I am working on.

Q. Do you -- how do you justify working on that project as opposed to some project which, at least to me as a layman, would appear to have a more primary significance to the development of a test method?

A. This smolder rate, in my opinion, the results from it could have an impact on what fabrics and what cation levels you might use in developing a test method.

Maybe the picture is not clear now for the time being as we are working on it, but it doesn't mean I am not working on other projects. I am working on locating standard fabrics, those five standard fabrics I mentioned before. I am working on that issue. I'm trying to locate different types of foams, I am working on that issue, too. I am looking use of soiled fabric. It is not that I am working on one project and that's smolder rate, no. I am looking at two different things.

Q. Is it true that if you weren't working on the smolder rate you could concentrate more on the substrate and the foam in the configuration?

A. I am concentrating on all of those projects and I am working on all of them, because I think all of them have an impact as to what is going to be a test method. And the smolder rate, in my opinion, will have -- might have an impact on the test method. What shape or what form now, as I sit down here, I don't know. But in my viewpoint it might shed some light on the ignition process. And unless you

understand the ignition process, how it occurs, you cannot ignore it.

Q. If you devoted more time, energy, resources to the selection of substrates and foam and configuration, would you be able to reach sooner an understanding of what is the appropriate substrate or substrates to use, what is the appropriate foam to use, what's the appropriate configuration to use in a test that would be valid and reproducible?

A. We are putting 100 percent resources into looking into these things, but also when you look at fabrics you have to look at the cooperation of other people. It is not our lab or industry coming up with these fabrics. You have to look at the cooperation of the fabric industry. So sometimes your progress is stagnated not because of you, you are not putting 100 percent time in it, you have to depend on other people like the mills, the foam manufacturers, to supply you with the product.

Q. Your work on smolder rate of fabrics and its relationship to linear burn rates, is that only with scientists at Brown &

Williamson that you are doing that work, or is that coordinated with any other industry scientists?

A. Currently at Brown & Williamson.

Q. Okay, and you are going to share that research with the other scientists through the Joint Venture, is that your intent?

A. I mentioned, yes, some data and results from it before, yes.

Q. Have any of the other industry scientists in the Joint Venture encouraged this work or have they just been silent on it?

A. I think they encouraged it.

MR. PATTON: Off the record.

(A discussion was held off the record.)

Q. Let's turn to page 2 of Exhibit 1, I have a few more questions on this exhibit. The third line from the bottom or the third dash from the bottom reads, "not necessarily an ignition test but must be correlatable to ignition and must include all

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cigarettes." This was listed as a requirement for a viable test method. Do you know why a test method would need to include all cigarettes or do you know what Dallas Pinion meant when he wrote that?

A. I have no idea what he meant when he wrote that.

Q. On page 5 of Exhibit 1, second paragraph, it says, "Brown & Williamson has not done any work on test methods." This it dated as of April, 1989. Do you know now, having been working at Brown & Williamson, if that is true or not?

A. I have not gone back and reviewed work in 1989.

Q. When you went to Brown & Williamson from American Tobacco or when the acquisition took place, who did you find to be further -- who did you find to have better understanding of test method work, Brown & Williamson or American Tobacco?

A. I would say both were about the same. I didn't have a view that we were ahead or they were ahead.

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Q. Did you notice one company having more expertise in one area than the other when you came over?

A. Between American Tobacco and Brown & Williamson?

Q. Yes.

A. In terms of developing a test method, I don't have a clear cut answer. I don't know.

Q. As far as product development did you see that one company was ahead of the other?

A. Product development in general?

Q. Product development of a cigarette that would be less likely to ignite upholstery.

A. There is no test method. I don't know which company was being ahead. At Brown & Williamson I am not involved in the product development aspect for low ignition propensity cigarettes. I am not involved in the product development part. I've attended some of the meetings since I've been there, but I am

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more involved in the test method evaluations and development issues.

Q. So is it fair to say that perhaps because of your limited involvement you didn't observe any substantive difference on who was ahead or who was behind in product development work?

A. I cannot judge that.

Q. As you sit here today you would not say that one had been ahead of the other?

A. I cannot judge it because I am not involved much in Brown & Williamson product development.

Q. Since you have been at Brown & Williamson have you sensed a greater or lesser commitment to developing an ignition test method, or the same level of commitment?

A. I would characterize it about the same level.

Q. Have you sensed any change between Brown & Williamson and American Tobacco in incentive or desire to develop a low ignition propensity cigarette?

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A. Failing a test, there is no test method out there, I think Brown & Williamson is working, as American Tobacco worked, on developing some prototypes with the knowledge they had. Which was ahead, I don't know.

Q. I understand both were working. Did you sense a greater emphasis at one company over the other in developing a cigarette?

A. I didn't sense that.

Q. You are aware that Brown & Williamson is seeking to develop a product that would pass the NIST test, correct?

A. I don't characterize the NIST proposed test method as a test method as it stands right now. It's as proposed test method. And failing another thing out there and as a company we want to be competitive, we have to look at different prototypes. If there is a test method you have to be competitive.

Q. Let me ask this question then. Did you sense any greater emphasis at American Tobacco or Brown & Williamson to

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develop a cigarette that would pass the NIST test or has the emphasis been the same?

A. I can't judge that, I don't know. I cannot answer.

Q. You have no basis?

A. I have no basis, no.

Q. And in discussions with colleagues you have no understanding of which one had more emphasis or which one got more resources?

A. No.

Q. Which one had more meetings on the subject?

A. No. We were both looking into it. Which is more than the other, I cannot judge.

Q. You have observed no difference, would that be fair to say?

A. No difference would be a fair assumption.

Q. Let's mark Exhibit 2.

(Wanna Exhibit 2 was marked for identification.)

Q. Do you recognize Wanna

Exhibit 2 as your notes of a Joint Venture meeting you attended on March 13, 1991?

A. Yes.

Q. Why did you type up notes of the Joint Venture meeting?

A. I prepared these notes for my personal use as what happened at the Joint Venture mainly to look back at what the scientific things that I needed to look at, my duties were as what I had -- I like to take notes. When I go back to the lab I know what I have to do, so that my boss can say you are supposed to do this and I do it.

Q. Did you circulate these notes?

A. No, Dallas Pinion was the only one who read them after I prepared them.

Q. Would Dallas Pinion edit them or make changes to them?

A. No, he just read them and returned them back to me.

Q. And was your primary goal in taking notes of the Joint Venture meetings to keep track of the scientific efforts that were

evolving?

A. Yes.

Q. In paragraph 2 of page 1 of Wanna Exhibit 2, you write that "Patricia Frazier presented an analysis of fire data gathered for the years of 1980 to '89." Why was the Joint Venture interested in fire data. How did that help the development of a test method?

A. The Joint Venture is responsible for developing a test method, that was their mandate. But certainly other information from some of the meetings, other information was presented at the Joint Venture. Some information related to the bill mandating developing a test method, so this information was shared and offered to the Joint Venture as part of the meetings.

Q. Was this information used in any way to develop a test method?

A. Some information may have shed light on developing a test method, but I just wrote it down to have a fuel picture of the meeting.

Q. Do you know if Patricia --

why Patricia Frazier was asked to give this presentation to the Joint Venture, what was the purpose of it as it relates to the goal of the Joint Venture to develop a test method?

A. As I said, this is information offered to the Joint Venture.

Q. In paragraph 3 of page 1 you write that "Jim Goold talked to Roger Barker of N.C. State University and asked him to revise his original proposal to shorten the time period from three years to one or two at the most." Do you recall what Barker's proposal was?

A. I have no recollection.

Q. Maybe the next sentence helps. It says, "the main thrust will be to develop sample fabrics and not devise a test method." Does that help refresh your recollection?

A. No. I can't recall what the discussion was.

Q. Was Barker only asked to develop sample fabrics and not devise a test method, or was that something that his proposal -- was his proposal naturally limited

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or was he asked to make just a limited proposal, do you know?
A. I don't know. I have no recollection of the discussion or the proposal itself.
Q. Has the Joint Venture ever hired a consultant with the instruction to devise a test method?
A. Could you repeat that?
Q. Has the Joint Venture ever given a consultant the instruction to devise a test method?
A. I can't recall that.
Q. Why hasn't the Joint Venture or why didn't the Joint Venture give a university or somebody a grant to undertake the project of developing a test method?
A. I cannot answer that. My personal opinion is it is a complicated subject and we felt that scientists at the Joint Venture being most familiar with the issue, they were well-equipped to investigate it and develop it.
Q. Was it ever discussed, this idea of hiring somebody else to develop a test

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method or giving a grant to some entity to develop a test method?
A. I don't recall that.
Q. In the fourth paragraph, "the consensus to was to keep a friendly atmosphere with UFAC and not to do collaborative work with them." Is that an accurate description of what was discussed at this March 13 meeting?
A. I don't recall that far back.
Q. Why did the Joint Venture not do collaborative work with UFAC?
A. I can't recall it being discussed or agreed not to do work with them. I just can't recall that.
Q. It says right here in your notes that they wouldn't do collaborative work. Do you recall any collaborative work having been done?
A. No.
Q. Do you recall in later meetings any discussion of whether collaborative work should be done with UFAC?

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A. I don't recall any other discussion.
Q. What would be the disadvantages of doing collaborative work with UFAC as far as the Joint Venture was concerned?
A. I can't speculate on that. I don't know.
Q. Would there be any benefits from working with UFAC in developing a test method that you can think of as you sit here today?
A. UFAC, the way I understand it, is that when we requested information from UFAC we are not -- or the fabric industry -- they were not providing us with any information. So we requested that information but none -- they were not cooperating with us, is how I look at it.
Q. I understand that. Has it been fairly recently that the fabric industry has not been cooperating with the Joint Venture or has that been longstanding?
A. I don't remember when, but in my opinion it was longstanding.

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Q. Was it at the time that you wrote this sentence that the consensus was to keep a friendly atmosphere with UFAC and not to do collaborative work with them, at that time was UFAC not being responsive to the Joint Venture?
A. I can't recall that.
Q. I take it there would be some advantages if you could have cooperation from UFAC in developing a test method; is that right?
A. The way I understand it, it would be a benefit if UFAC and the fabric industry would supply us with data on the fabric out there, and when you request fabrics to be made, I think that would be helpful if they cooperated with us in making the fabrics for us, supply us with the data on the fabric characteristics out there and distribution.
Q. So if UFAC and the Joint Venture could work together there would be some benefits as far as test method development is concerned?
A. I can't answer, speculate

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anything on what would happen, the outcome, I cannot speculate on that. I don't know.

Q. Has there been any discussion regarding a prototype fabric being manufactured by UFAC or the fabric industry for the Joint Venture?

A. I can't recall any discussion.

MR. PATTON: Did you mean one particular fabric or his testimony previously when he talked about requests to have the fabric industry or various mills manufacture some prototype fabrics.

Q. Earlier we talked about the five fabrics that you tried to have certain mills produce. Was that done on an individual company basis or was that done through UFAC, the organization?

A. The five fabrics, the Joint Venture decided to chose those five fabrics, and we've been going to mills requesting them to make and getting no cooperation.

Q. And that was to individual companies, fabric companies, correct?

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A. Yes, I am not -- I can't speak for the other Joint Venture members going out and asking them. I can't speak for them, but I am speaking from my own experience what I have been talking to them, calling the individual mills.

Q. As far as you know, has the Joint Venture ever tried to contract with UFAC as an entity to get these test fabrics developed as opposed to some individual companies?

A. I don't recall that. I don't know, I can't answer.

Q. Let's mark Wanna Exhibit 3.

(Wanna Exhibit 3 was marked for identification.)

Q. Do you recognize Wanna Exhibit 3 as your notes of a May 22 Joint Venture meeting?

A. Yes, looks like they may be my notes.

Q. In the last sentence of the first paragraph there is a discussion about brand data for the -- I believe it is the Bea Harwood pilot study. Do you recall American

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Tobacco not wanting to sign over brand data for that study?

A. I don't recall that discussion, I don't know.

Q. Do don't remember whether or not American Tobacco took a position?

A. No, I can't remember.

Q. Let's mark Exhibit 4 of Wanna.

(Wanna Exhibit 4 was marked for identification.)

Q. Exhibit 4, I believe, Dr. Wanna, are notes from someone at Philip Morris of the same Joint Venture meeting, and I refer you on the first page about three-quarters of the way down, where it says that "American won't sign over brand data to allow Roger study to go forward." Do you see that?

MR. PATTON: I am sorry, where are you. Okay, I see it, go ahead.

A. American won't sign what?

Q. Over brand data to allow Roger study to go forward -- Roper study.

A. I can't recall the

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conversation or what happened, whether they would agree or not. Apparently he took them down -- that was his understanding when he wrote it down.

Q. Does this recording refresh any recollection as to what conversations there were regarding American not desiring to sign over brand data?

A. No, I don't recall the exact conversation.

Q. Do you recall any conversations in-house with Dallas Pinion about whether American was concerned about brand data with regard to the Roper study or the Bea Harwood study?

A. No, I did not discuss it with him.

Q. On the second page of Wanna Exhibit 4, at the bottom there is a star and the line reads, to the best of my ability, strategy -- I believe end point for JV, should there be and industry strategy group to focus on education/ furniture industry, etc. Do you see that?

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A. I see it.
Q. Strategy output, that could be strategy output.
A. Yes.
Q. Do you recall any discussions at this May 22 Joint Venture meeting or any other Joint Venture meetings regarding Joint Venture strategy or industry strategy with regard to education in the fire safety area?
A. No, I don't recall such decisions, it's something that whoever recorded these notes put it down.
Q. At no meetings, is it accurate to say that at no meetings you recall any discussion of whether the Joint Venture should adopt a program of education with regard to fire safety?
MR. PATTON: Whether the Joint Venture or the industry should?
MR. READ: The industry, yes.
A. I don't recall any type of discussion.
Q. Do you recall any

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discussions about strategy with regard to the furniture or fabric industry at this or any other Joint Venture meetings?
A. No, I don't recall any of those discussions taking place.
Q. Do you believe you would remember if such discussions took place?
A. The Joint Venture, the way I understood it, was the goal was developing a test method, and that was -- the science was pushing towards that and that is what the strategy was, to develop a test method and look at the issues related to developing a test method.
Q. I am not sure we understood each other. Do you believe that you would remember conversations about Joint Venture or industry strategy with regard to either the furniture or fabric industry at Joint Venture meetings?
A. If the Joint Venture adopted a strategy other than that, than focusing on developing a test method, I would have remembered.

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Q. Because it would have been an inappropriate thing to do?
A. Because then it would be a changing of goals. I would have remembered if such a thing happened. I don't recall it happening and throughout we focused on the science and developing a test method.
Q. Let's mark number 5, please.
(Wanna Exhibit 5 was marked for identification.)
Q. I believe Exhibit 5 to be a memo from a Liggett employee who attended that same May 22 Joint Venture meeting. Let me refer you to page 2 of Exhibit 5, the paragraph, the first full paragraph under the heading he Evaluation of Treated Fabrics. Do you see that?
A. Yes.
Q. Discussed a report that you gave. Could you describe to me that report and what your findings were?
A. At one point when we couldn't get any more ignition testing at American Tobacco was done using the TSG

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California type fabrics and batting and foam. We reached a point where we could not buy California fabric anymore, it was not reproducible, batting was not reproducible, and we were trying to try different ideas and we thought of obtaining light weight cotton twill fabrics and treated in-house with potassium citrate or acetate, and we did some testing initially.
And here it says differences in ignition were observed at the low and medium levels of potassium citrate treatments, and results were promising and additional tests will be made, that is all. I don't recall the exact what cigarettes we tested, but we did some TSG type prototypes, I imagine, and there were different ranks of ignitions. But that was still also in the early stages, we didn't do a lot of fabric surveys, so this light weight cotton fabric, we tried it.
Q. Was this an attempt to find a suitable fabric on which to develop an ignition propensity test?
A. You might characterize it as

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one fabric we tried to look at in our lab, yes.
Q. My question was, was the testing an attempt to find a suitable fabric on which you could base a test, ignition propensity test?
A. We were exploring with different ideas and this one idea that came up we tried to see what it would lead to, what data we can get out of it.
Q. The Liggett employees refers to the results as promising. Would you have characterized your results in the same way?
A. I don't have the data in front of me to see. At the time, I guess, maybe in his opinion it was promising. I don't recall what the data is.
Q. What was the hypothesis or goal of this testing?
A. As I remember it, at that time frame we couldn't get anymore California standard fabrics. We couldn't get anymore batting, and we were grappling with what to do next. And this idea of getting this fabric and treating it with potassium acetate might shed

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some light on future direction.
Q. How does – how did your research then in May of 1991 differ from the fabric – five fabrics and the potassium we talked about earlier in the deposition that the Joint Venture is now going to do?
A. I think now we are more aware that it's not only one fabric, there is a lot of – ignition depends on the weight of fabrics is an issue, and air flow may be an issue, but related to the fabric issue only, there is different weights and different effects. At that time we were not aware of it. I wasn't aware of it.
Q. Let me make sure I understand. The testing that the Joint Venture will soon embark on with the five specially made fabrics that will have potassium treated, will be different because the fabrics will have different weights, but I don't understand what else is different or what new things you expect to learn over what you learned back in '91?
A. What we expect to find out is different fabric weights, different

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permeability effects, and potassium levels and air flow now might be an issue. Configuration, also.
Q. Was there any follow-up to this research that you did in 1991 that is described in Exhibit 5?
A. I can't recall now. I remember we did preliminary work on it, testing it under one configurations in the flap, in-house treatments, and we observed that the treatment level was variable, we're not very good at it. You think you have this amount of potassium, but after analysis the variability would be high. After treating one batch we cut it up into small pieces that would not behave in a similar manner. So we have problems in the house treatment of those fabrics.
Q. How do you intend to solve that in this new testing?
A. We have not discussed it and haven't thought about it, I think. Maybe go to a professional place where they can treat it on larger rollers or some treatment places. I am not experienced in that area, it is not my field

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of expertise, so I don't know how to solve it.
Q. But that hasn't been discussed at the Joint Venture, as far as you are aware?
A. What I recall is that they plan to treat it. Where or when, I don't know.
Q. There has been no discussion as to how to control the treatment so it won't have the problems you had in 1991?
A. No, there has not been any discussion of it, and that is why I sometimes think about it.
Q. Did you raise with the Joint Venture the problems you had in 1991 on this treatment question?
A. Maybe I mentioned something, you have to make sure that the treatment has to be, you know, fairly good or level across the fabric. Otherwise you're going to have variability areas in the same batch, and it'll give you problems. I might have recalled – mentioned it. I'm not sure.
Q. Do you recall what response there was to your mentioning it, assuming you

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mentioned it?

A. No.

Q. I take it you eventually abandoned or stopped researching this potassium citrate that is discussed in Exhibit 5, correct?

A. Yes, yes.

Q. Was reason you stopped testing investigating this because of the house -- the problem of house treatment, was that the principal or main reason?

A. I think it was the main reason, yes.

Q. Did you raise with the Joint Venture at that time this problem and ask for ideas on how to overcome this problem?

A. I don't recall. I don't remember, I don't know.

Q. Do you recall discussing with anybody how to solve this treatment problem?

A. Frankly I can't recall what I discussed with anybody or not. I can't remember.

Q. Do you recall ever providing

additional reports to the Joint Venture on this subject that's recorded here in Exhibit 5, ever getting a follow-up report?

A. I have to go through the minutes to see if I did or not.

Q. Without going through the minutes, you don't recall?

A. I don't recall, no.

Q. Turn to page 3 and 4 of Exhibit 5. Item 6 on page 3 is what we'll look at now. It reads, "Dallas Pinion (Chairman Industry Group) expressed his concern that the industry group may not be clearly focusing on the direction and major objectives agreed upon when the group was established. As a result, he pointed out that we have only two and a half years to complete our work and hopefully influence the TAG in their approach to setting up a standard test which will be acceptable to industry." Do you recall these statements by Dallas Pinion at this meeting?

A. No, I don't recall these statements.

Q. Do you recall Dallas

reminding the group what the objective and focus of the Joint Venture was?

A. I don't recall the contest or what Dallas Pinion said to the group, what -- took the notes wrote down here.

Q. Do you recall at any Joint Venture meetings, earlier or later, Dr. Pinion reminding the group, refocusing them on the goal of test development?

A. No, I don't recall. The Joint Venture was in a focus on that. Sometimes there was other discussions of different issues, but that is not the main objective of the Joint Venture.

Q. Did Dr. Pinion ever say to you that the Joint Venture, one of the purposes of the Joint Venture would be to influence the TAG to set up a standard test that would be acceptable to the industry?

A. No, I don't recall him saying that.

Q. Either at Joint Venture meetings or at American Tobacco?

A. Yes, either place.

Q. Exhibit 5 continues, "He suggested that our work should be concentrated in three areas: 1. Develop an industry test method. 2. Determine what TAG is doing and develop information to anticipate consequences. 3. Develop an industry strategy for developments after the TAG complete it works." Let me focus on the second point. Was that a goal of the Joint Venture to determine what the TAG is doing and develop information to anticipate consequences?

A. Part of the Joint Venture was to look at and evaluate this test method, we are looking at the test method and NIST proposing this test method. We have to look at it and evaluate it and look at the shortcomings of that test method and point them out. So if that is what is meant by what is written here, I don't what know John Woods meant by that.

Q. You don't recall any conversation on this, along this line?

A. I don't recall, but I said the Joint Venture was looking at the NIST test method and trying to evaluate it and how good it

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is, evaluate it in that aspect.

Q. Then part 3 read, "develop industry strategy for development after the TAG completes it work." Do you recall any industry strategies that were discussed regarding what would occur after the TAG completed its work?

A. I am not aware of any.

Q. Do you recall outside the Joint Venture with Dallas Pinion any discussion of what -- perhaps in preparation for a Joint Venture meeting -- what industry strategy should be with regard to developments after the TAG completes its work?

A. No, I don't recall any discussions.

Q. The next paragraph reads, he, meaning I think Dallas Pinion, "asked that all participants prepare a list of suggestions under each area for discussion at the next meeting." Do you recall if that was done?

A. No, I don't recall what the list is.

Q. Do you recall working on such a list?

A. No, I can't recall that list. But I list later on, maybe not related to this Joint Venture meeting, a list of areas that should be explored, scientific areas.

Q. Was there any discussion at Joint Venture meetings of how ignition propensity regulation would affect current brand?

A. No, I don't recall any discussion of that nature.

Q. Or affect market shares?

A. No, I don't recall any of that discussion, no.

Q. Or overall industry sales?

A. No, I don't recall.

Q. Was in any discussion that ignition propensity regulation would be burdensome to the industry?

A. No, I don't recall any of that discussion taking place.

Q. Do you recall any discussion that ignition propensity regulation would be beneficial in some way to the industry?

A. No, the Joint Venture said

the major discussions were scientific discussions towards developing test methods and the issues related to that, no discussions towards market share or beneficial to whom or what.

Q. Do you recall any discussions on whether the development of a test method by the Joint Venture would make ignition propensity regulation more or less likely?

A. Could you repeat that?

Q. Do you recall any discussions on what impact the development of a test method by the Joint Venture would have on whether or not there would be regulation in the ignition propensity area?

A. No, I don't recall that.

Q. To be clear, no one ever said or hinted that if a test method were developed regulation would be more likely, as far as you can recall?

A. As far as I recall, I can't remember.

MR. PATTON: Don't remember that happening?

A. Yes, I don't remember that happening, I don't know.

Q. You attended most of the Joint Venture meetings, correct?

A. Most of them, not all of them.

Q. And you stayed throughout the meetings, those that you attended for the most part?

A. More the most part.

Q. Who were the principal intellectual leaders of the Joint Venture?

A. I don't know what you mean by intellectual leaders. There were scientists presenting from each company.

Q. Were there some people by virtue of their intellect or personality that tended to guide the Joint Venture efforts more so than others?

A. I didn't see it that way, no. What do you mean by somebody guiding. It was a free discussion.

Q. How were decisions made with regard to whether the Joint Venture would do or

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not do a certain project?

A. That goes back to the organization. What I recall is that they agreed on a vote basis, somebody proposed something, you vote on it.

Q. I have seen in the documents at some point that a vote of 4 to 2 would authorize an expenditure for the Joint Venture to do something. Do you recall that?

A. I don't know. If two people objected maybe they would not go forward, but it doesn't mean that the individual companies who think it's a valuable scientific issue, they can go ahead and do it. But no Joint Venture money from their part would be spent on it. I think that is the way it works, I don't know.

Q. Now that there are only five cigarette companies instead of six, is it still a 2-vote veto?

A. I don't remember it being discussed, but I don't know -- I don't know if it stands the same or not, I don't know.

Q. In your experience has the Joint Venture operated more by consensus or by

this process of taking votes?

A. To me it operated by discussing the scientific experiment at hand, and if it was not worth it, most of the people agreed that it's a good scientific basis they agreed it is worth it.

Q. If one company or individual expressed strong reservations would the Joint Venture as a matter of practice still go forward with the funding of a research?

A. If a good scientific experiment was presented and one company opted that they don't want to put their money in it, yes, it is their opinion, I guess.

Q. I was wondering if as a matter of practice if it ever occurred. Maybe it never occurred.

A. I don't remember. I don't recall whether it occurred or not.

Q. So to be clear then, your memory is that at no time did just one member of the Joint Venture express strong opposition to a project?

A. I don't remember for a

fact. You have to go through the minutes, official minutes and see if somebody objected, I don't know.

MR. PATTON: His question is do you recall that ever happening.

A. No, I don't recall one company strongly objecting to an experiment. That is my recollection, I could be wrong.

Q. So are you speculating then as to what would have happened if that occurred or whether the Joint Venture would have gone forward in spite of or whether it would have restrained itself in deference to this one member?

A. I don't know what would happen.

MR. PATTON: I think you don't recall that ever happening; is that correct?

A. I don't recall that ever happening.

Q. And when you said earlier you thought that the work would go ahead and be done, you were just expressing your personal

opinion but not based on something that you recall actually having happened historically; is that correct?

A. What I recall is that when they talked about voting, how to vote on issues, if two objected then they opted not to fund the project.

Q. On a Joint Venture basis?

A. On a Joint Venture basis, but the other four can go ahead. Those, I think, were the rules as I recall them. Now whether it came up or not in actuality, I don't remember.

Q. Dr. Wanna, do you know if any of the scientists that participated in these Joint Venture meetings were ever involved in the development of other test methods besides ignition propensity?

A. Other scientists, I don't know.

Q. Did anybody claim any experience in the development of test methods, other types of test methods.

MR. PATTON: Same

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scientists, other test methods.
A. I know some people presented some other data on their work, like R.J. Reynolds presented studies using liquid crystals, I remember.
Q. Perhaps my question is not clear, let me try it again. Did any scientist that participated in the Joint Venture, as far as you know, have any experience in developing different test methods in different subjects, FTC tar and nicotine, CORESTA porosity or a myriad of others?
A. I don't know.
MR. READ: I'm at a breaking point if it's convenient.
(Break.)
(Wanna Exhibit 6 was marked for identification.)
Q. We have marked Exhibit 6, which are notes of a June 11, 1991 Joint Venture meeting. They're from Liggett, and Dr. Wanna is listed, according to this exhibit, as an attendee at the meeting. Let's turn to page 4, Dr. Wanna. Let's look at section 5 under the

heading Proposed Interlaboratory Study. Do you see that?
A. Yes.
Q. About six lines down it reads, "It was agreed that the most logical approach is to repeat the original TSG study in question in the context of an interlaboratory correlative study. The attendees agreed that this study should be conducted using the CORESTA Task Force as a vehicle." Did I read that right?
A. Yes.
Q. Do you recall discussions -- let me ask you this. Why did the Joint Venture discuss what CORESTA should undertake?
A. Can I read the whole --
Q. Certainly.
A. Okay, your question is --
Q. The question was -- let me ask you first, did the Joint Venture frequently decide what or did the Joint Venture decide at times what tests CORESTA should undertake as opposed to the Joint Venture?
A. No, the way that the

organization -- the way the organization worked is better than answering no or yes, CORESTA was an international group of tobacco industry and affiliated industry with the tobacco industry, and Joint Venture was basically the five or six tobacco companies at the time in the United States. And so if there was an experiment that we needed a large base of labs to perform for reproducibility data, it would be better to go to a larger lab data base than a smaller data base to get the reproducibility numbers better.
Q. Were there other reasons to do a test through CORESTA than Joint Venture besides the larger number of labs?
A. Besides that CORESTA was an international group could have also made the data coming from a larger group, international group, would maybe have more credibility to some people.
Q. Did the Joint Venture sometimes choose to have a test run through CORESTA because of CORESTA's better credibility?
A. I don't recall this going to CORESTA just because of better credibility, I

think went to CORESTA because we needed a large data set, mainly.
Q. Was credibility a factor that would influence whether a test would be done through the Joint Venture or CORESTA?
A. I can't answer that. I don't know. But my personal opinion, what I have seen is that because the data coming from the tobacco industry labs were always, you know, not taken as a credible data, they were laughed at or being it is not scientific, they're manipulating things, so --
Q. And so running the test through CORESTA would be one way to solve that problem?
A. We didn't go to CORESTA just because of that. We thought was there a value if we needed a large data base to do the study at CORESTA. And CORESTA, you have to keep in mind when you go through them the experiment takes a longer time and the turn-around time is much longer than Joint Venture, because the labs are in the United States, experiments can be done and turn over the data set quickly and

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performed in a speedier manner.

Q. A couple of lines down the sentence reads, "The focus will be on methods as the issue in contrast to cigarettes." Do you see that sentence?

A. No, where?

Q. It is the sentence after what I read previously.

A. The focus, okay.

Q. Based on your attendance at this Joint Venture meeting, do you have an understanding of what that sentence means?

A. No, I can't recall what the context is.

Q. The last sentence on page 4 of Exhibit 6 discusses a mid-range of cigarette prototypes. Let me read that completely. "A mid-range of cigarette prototypes was suggested to provide a critical test of interlaboratory discrimination, i.e., a wide spread in cigarette design would inadequately challenge the method." Did the CORESTA study use a mid-range of cigarettes?

A. I don't recall any test was

done, you know, coming from this discussion that CORESTA performed any studies related to this. I don't remember if an experiment was done, maybe there was an experiment done after this discussion, but I don't recall the exact date. If they were talking about an experiment that happened later, I don't recall.

Q. But it was the case that the Joint Venture at this time was looking to challenge Dr. Gann's -- it was the case that the Joint Venture at this time was looking to challenge the TSG results or test method?

A. In 1987 Gann did not -- I think he came up with the findings. There was not a test -- proposed test method in 1987. He had some findings which he shared, you know, published. And from reading this, I don't recall the conversation, we didn't agree with his rank and the TSG ate us up. It was a flawed ranking.

Q. And so what happened is the industry at that point set out to challenge that ranking?

A. It was not an objective to

go out and attack what the NIST test came up with. We planned, maybe, or discussed here to come up with an experiment to show the shortcomings of the TSG '87 data as being flawed. It was not the purpose at the outset being against NIST, and just that is the main objective of the Joint Venture was oppose NIST or whatever they say. No, we saw the shortcomings of the '87 data. And from what I read here is that maybe some discussions occurred of planning an experiment to point the shortcomings of that '87 data.

Q. Let's mark Exhibit 7 of the Wanna deposition.

(Wanna Exhibit 7 was marked for identification.)

Q. Dr. Wanna, do you recognize Exhibit 7 as your typed notes of a July 23 Joint Venture meeting?

A. Yes.

Q. In paragraph 2 you state, "Initially discussion centered on the strategy on dealing with Gann and TAG. One idea was to try and include fabrics as another culprit in

fire cases, but Jim Charles thinks this would be a wrong move and the industry would appear to be trying to shift the blame to fabrics." Did I read that correctly?

A. Yes.

Q. Why would the Joint Venture want to include fabrics as another culprit in fire cases?

A. I can't recall exactly what I meant by including this sentence in the minutes. I can't remember the context of the conversation or the discussion where it was going, so as I read it now I don't know what it means.

Q. Over the time that you have participated in the Joint Venture, has the industry tried to make fabrics be the problem with regard to fires as opposed to cigarettes?

A. As a Joint Venture we did not come out and say, well, you know, fires are, you know, caused by fabrics. We know fabrics are an issue, by the test method we are dealing with fires on fabrics. So we have to deal with the fabrics, whether it's being the test method

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with fabrics we look into a test method, what fabrics Gann was looking into, so it was part of the test method work that we have to look into was part fabrics and not -- you have to look at that issue.

Q. In paragraph 4 the last three sentences read, "A request for bids should be coming within a month." I believe those are bids for the Bea Harwood study. "Phil Schaenman of TriData asked his friends to bid on it but they are reluctant because the money may not be enough. NFPA think the sample is too small." Do you see that?

A. Yes.

Q. Why did Phil Schaenman of TriData ask his friends to bid on the Bea Harwood study?

A. I don't know of a reason. I can't recall if any reasons were given as this report was happening at the time. Just part, you know, of the information related to the bill, and it is information shared with the Joint Venture now.

Q. Phil Schaenman was a

consultant to the Joint Venture, wasn't he?

A. Yes.

Q. And did the Joint Venture perceive some advantage in having friends of Phil Schaenman bidding on the Bea Harwood statistical study?

A. I don't recall any discussion to that effect.

Q. The last paragraph of Exhibit 7 reads, "Dr. Fred Clarke of Benjamin/Clarke Associates, Inc. attended afternoon session. His idea is to fault Gann's ranking of the TSG cigarettes, show that a safe cigarette according to the TSG test is not really safe or has a different ranking on another test method. Use for example the data on cigarette circumference from R.J. Reynolds. He also gave some insights on Gann and NIST." Were the consultants asked to think of ways in which to poke holes in the NIST test?

A. No, I disagree with that statement. The way we are looking at hiring consultants is we have a problem, scientific problem we want to deal with, and we look at

consultants would have had the expertise in that area to give us credibility to the science, and that is the major reasons we look at consultants. Not because we want to attack NIST on something. We saw the shortcomings of some of the NIST scientific issues and we look for consultants with expertise in that area who could help us clarify that.

Q. Let me rephrase. Were any consultants retained for the purpose of finding shortcomings in the NIST test method?

A. I repeat what I said, is that consultants, as my understanding, were hired when there was a certain issue to be addressed, scientific issue to be addressed, we looked for consultants who have the expertise in that area and who were experts in that area and hired them. Basically that is what my understanding is.

Q. What was Fred Clarke's expertise?

A. He was very familiar with the TSG work. I remember he used to work at NIST, so he was very familiar with the 1987

experiments and work and he reviewed the report.

Q. And how is that expertise needed other than to show or develop shortcomings in the NIST method?

A. Well, if the NIST test method had flaws and shortcomings, he could point them out. I don't think there is anything wrong with that. It is a wrongful test method.

Q. There may or may not be anything wrong with it, but my question is was Fred Clarke retained to point out shortcomings in the NIST method, in the test method?

A. My understanding, he was retained to point out and analyze the NIST test method on the basis it was done, if any flaws were in it to point them out. We did not hire consultants and tell them you have to find this or that. We gave them the problem, the scientific problem, and let them go on and analyze it and come up with their own conclusions.

Q. This is Wanna Exhibit 8.

(Wanna Exhibit 8 was marked for identification.)

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Q. Dr. Wanna, Exhibit 8 I believe to be Dennis Dietz's from Liggett notes of the same July 23, 1991, Joint Venture meeting. Let me turn you to page 2, where at the top or near the top Dietz writes, "Goold -- have to assume good primary method will not surface. Round 2, cigarettes versus fabric -- will loss 11 to 4." Next line, "Transfer problem to fabric people -- Jim Charles." Next line, "the wrong approach." Did I read that accurately as far as you can read the handwriting?

A. As far as I can read the handwriting it sounds right.

Q. Did the Joint Venture operate under the assumption that a good primary method would not surface?

A. Not to my knowledge. I don't know what, you know, the context of these minutes, you know, this writing in the notes was.

Q. At this time then was the Joint Venture optimistic that a good primary method could be developed?

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A. I don't recall at that time, you know, but what the -- how far Gann was ahead in developing his test methods, I can't recall or speculate at that time.

Q. How optimistic are you as you sit here today that a good primary method will be developed within the next two years?

A. I hate to put a -- saying a time limit on good scientific data, telling me that, okay, in two years time we have to develop a test method. I find that is a shortfall of NIST, they give a time you have to have a test method by this time frame. Then you might tend to get into a rush and into using wrong assumptions in developing a test method. You have to do your work, do your homework and do your science correctly, and maybe within two years' time, maybe, you know, three years' time, maybe less, you might have a better test method. But to sit here now and say in two years time I will have a test method, I can't tell you yes or no. But I am fairly optimistic that we are doing a lot of progress in terms of acquiring a lot of knowledge on what should go

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into a test method and the variables that should be incorporated in a test method, and I am have, you know, comfortable with those.

Q. If the COO of Brown & Williamson came to you today and gave you the assignment to develop a test method within two years, how likely would you tell him it would be -- how likely would it be that you would develop such a test by that time?

A. Most likely I would give him the same answer. I mean, my experience with science is that I cannot tell you, okay, I will have a time frame and do an experiment. You never know along the way what will come up. I ask tell you what issues should be confronted and what issues should be looked into towards developing a test method. At the end of two years I can give you a clearer picture of what a test method would look like after resolving some of the issues of the studies we are doing now. But I cannot say in two years time John Wanna will have a test method. I can't promise anything to any scientific issue in that sense.

Q. Why in July, 1991, did Goold

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tell the other Joint Venture members that they had to assume that a good primary method would not surface?

MR. PATTON: I object to that on the grounds it lacks foundation and I think you are taking that out of context, or at least there is no showing in this record what that context is. For example, was this a preliminary report on a legislative kind of thing not related to the direct objective of the Joint Venture. It comes under a heading or a note that says report to Congressman Moakley. I am posing the question, was it in the context of from a legislative standpoint. This is an assumption that has to be made. It may not mean necessarily, and I am not putting words in his mouth, we'll see if he recalls, but it may not be in the context of, oh, your efforts as a Joint Venture are doomed, you are not going to be successful over the next year and a half or two years. Do you recall his question?

A. I recall your question. I don't recall what Goold was addressing. This could be just a general information offered to

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the Joint Venture. That's all.

Q. Let me ask again, do you know why -- do you recall any statements along these lines?

A. No, I don't recall any.

Q. At the bottom of page 2, the last dash, it reads, "Gann has two rankings of cigarettes but why worry by small flip flops (outliers). This may therefore not bother or cause problems to the non-scientist. Results here, results there. This is reality. Real world analogy is the final yardstick, i.e., if legislate one G or J and other is really the best, that would present a real problem. Reduce fires -- final yardstick." How would you respond to a statement by Gann that the reversals are either noise or outliers or small flip flops?

A. How would I respond to Gann?

Q. If he said something along those lines.

A. I don't agree with him.

Q. Why not?

A. Because reversals are --

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they're not noise. They're observable and in experiments we have shown it, and I don't know how can you tell him. To him it is noise because he wants to say that he did good science.

Q. If Gann said that reversals were outliers or not -- perhaps that is not the right word, not -- they were not a large population of the fabric, what is out there among fabrics, how would you respond?

A. I still don't agree.

Q. And what would be your basis?

A. Because we have done a lot of work and we have shown that reversals occur. I can't see how he claims to be a minor occurrence, so I don't agree with him. And he is just making -- Gann never really did any testing in his lab to look at fabrics in the NIST -- 1990 TAG meetings, when he reported his studies of NIST.

Q. Do you believe that if the NIST test were adopted and cigarettes were required to pass the NIST test, that that would

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1 increase the number of real world fires?
2 A. That's speculation. What I
3 have seen happening is we observe reversals. We
4 have seen it in experiments, it is a true
5 phenomenon. How it will translate to the real
6 world, I don't know how it would play out.
7 Q. You don't have a sense of
8 whether the reversals would be so significant
9 that it would cause an increase in fires?
10 A. I can't speculate on my
11 own. I don't know what it would do, might cause
12 more fires, even the same, I don't know. But it
13 is not -- to me there is the real world
14 phenomenon and experimental in the lab seeing
15 reversals. How it plays out, I don't know.
16 Q. The next page of Exhibit 8
17 at the top it reads CPSC. There is a little
18 arrow, "confront here -- attend here to confront
19 Gann. Go over his head after cards on table."
20 Would you read that differently than I do?
21 A. I don't agree with the way
22 you read it because I cannot read it.
23 Q. How would you read it, Dr.
24 Wanna?

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1 A. I cannot read it. I don't
2 know.
3 Q. Was it a strategy of the
4 Joint Venture to wait for Gann to come forward
5 with his test or put his cards on the table and
6 then to go over his head to the CPSC or to find
7 shortcomings in his test?
8 A. I don't think -- I don't
9 recall that it was a strategy of the Joint
10 Venture to go and wait, you know, politically
11 play him to put his test method first. As I
12 recall, went in and went to work with NIST and
13 Gann, we had a lot of scientific meetings at
14 NIST to discuss the issues, the scientific
15 issues that NIST should look at. Initially that
16 was -- we wanted to work and were willing to
17 work with him, and presented all of the
18 experiments of CORESTA or the Joint Venture at
19 the meetings, and he was there with his
20 scientific people.
21 Q. On page -- it is listed as
22 page 5 of Exhibit 8, it's Bates stamped
23 LI-02788, at the bottom of the page the final
24 paragraph reads, "2) NIST culture -- politics --

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tied to causes. Consider acceptable even if not done right since goal to decrease smoking fulfilled -- must do more than demonstrate that could have been better or wrong." Would you read that any differently than I just did?

A. The way you read it is accurate.

Q. I want to focus on the line about "must do more than demonstrate that could have been done better or wrong." Was that the challenge that faced the Joint Venture to demonstrate that not just that the NIST test was wrong, but that it would do more harm than good?

A. I don't know what it meant by, you know, the way it is written here in the notes. I don't know what he meant by them, but your question is whether the Joint Venture was out there to do what?

Q. Was that the challenge to the Joint Venture?

A. To do what?

Q. To demonstrate that not just that the NIST test was wrong but that it would do more harm than good.

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A. I understand the Joint Venture goal was to develop a test method and work with Gann and look at the issues, scientific issues related to developing the test method.

Q. If the NIST test has some flaws but on the whole would reduce fires a little, if not a lot, wouldn't it be better to have the test for regulatory or competitive purposes than to not have the test?

A. For regulatory and competitive purposes?

Q. Or competitive purposes?

A. What do you mean competitive, between the industry?

Q. Yes.

A. It is a very vague question.

Q. Is it better to have a test, even with flaws, than no test?

A. If you have a test method with flaws that will cause more damage, no. You have just -- you are making the problem worse. To me you have to look at a test method and make sure what you are putting out is a good test method.

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Q. And so the question then is that the test method, does it do more damage than not?

A. I can't speculate on what the test means unless you have a test method here to compare it to. I don't know, I can't speculate.

Q. Turning to the next page stamped LI-02789 at the bottom, let me try to read this and I will let you tell me if you agree with my reading. Focus -- cigarette industry. Next line, furniture industry. "To displace the focus would not help our case because we would be perceived as avoiding our responsibility. Population of furniture 15 years old, spilled and sweated upon and not under control of manufacturers. Lag time problem. Cigarette are controlled." Would you read that any differently than I have?

A. That's a good try, I don't know.

Q. That is a good answer. I understand that you have recently done research

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on sweat and the effect of sweat on fabrics?

A. Yes, I call them soiled fabrics.

Q. Could you explain that research to us?

A. All along we have been telling the fabric industry if you really clean the fabrics, just wash it, remove the cation content out of it, there will be no problem in terms of cigarette-induced ignitions or other ignitions due to other sources even. But they claim that, well, if you wash the fabrics people are going to use it and then sweat on it and spill stuff on it and it's going to get dirty again and going to become ignitable, so there is no use in doing it.

So we thought, well, let's go out and really check that, so I went out to upholstery shops in Virginia in the Chester area around Richmond, and collected about 60 upholstery fabrics from different upholstery shops, like a chair you can still tell where the sweat is like in the cushion or the arm rest or the back, versus deep in the crevice or under

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the cushion, there's still some clean part of the fabric you can cut. So I took pieces from the same fabric, clean piece deep in the crevice or under the cushion, and a dirty piece from the cushion or the arm rest.

I submitted them for analysis of cations and anions, and also there is a simple procedure to tell whether a fabric can be smolder ignition prone by lighting a small -- putting a small flame to it, let it burn, smolder, for two minutes. If it does smolder for two minutes it will predict 90 percent accurate that this fabric may be ignitable with a cigarette. So because we didn't have enough fabric swatches to do a full-scale study with cigarettes on mock-ups, I used that criteria.

And I found out that actually soiling fabrics does not increase the ignition propensity. If anything -- I should say smoldering potential -- if anything it lowers the smoldering potential. And the reason it lowers the smoldering potential, you might be adding some potassium and sodium, but the levels

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you are adding are not very large, like we're adding maybe 500 to 700 ppm, which is not going to make a difference. But you are adding other anions like sulfite, I found out sulfites, and some what NIST actually called in the TSG report mineral dust. And these two factors will lower ignition propensity.

So out of the samples I have, actually five that were ignition -- more smoldering prone in the clean state and were not smoldering prone in the dirty state. I am not claiming this is statistically significant factor, it is just maybe we'll say it is error, within error, but the fact is I found five fabrics that are less smoldering prone in the soiled condition versus the clean condition, and we are repeating the same study to get a larger data base in Georgia. So that refutes the fabric industry claim that dirty fabrics are more ignition prone, that's not the truth, because nobody has done this work before. I couldn't find anything in the literature to support that claim. That is why we did them.

Q. Let me back up and make sure

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I understand some of the details of the testing. You got pieces of furniture in Chester, Virginia, is that --

A. Fabrics.

Q. Was it off of used furniture?

A. Yes.

Q. And where did you get the used furniture from?

A. I went to upholstery shops where people take the furniture to be upholstered and I asked them to save me the fabric, the old fabric they take off and throw in the garbage. Gave them a bag and saved it for me and I picked it up later.

Q. How many pieces of fabric did you do the testing on?

A. Sixty.

Q. And what you compared was a piece that was on the top of the cushion versus a piece that was underneath?

A. Yes, and deep in the crevice, it looks clean.

Q. And you ignited it with a

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cigarette lighter?

A. Yes, there is a test, you know, performed at two places independently, Brown & Williamson and Philip Morris. It takes a 2-inch by 2-inch piece of fabric, you light the lighter and start a flame ignition, and then you blow the flame out. You have to be under a hood in a lab. You blow the flame out and you time the smoldering front on the fabric with a timer. And the observation is if it smolders for two minutes or more it is most likely going to be ignitable with cigarettes. That is what the tests have shown 90 percent accurate.

Q. And did all of the fabrics ignite initially?

A. Initially, yes, synthetic, cellulosic, with a flame, yes.

Q. But the point was that the clearer fabrics, actually a few of them smoldered longer than of the dirty fabrics; is that correct?

A. Yes.

Q. Do you have any plans to run this experiment but with cigarettes, more like a

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mock-up test?
A. I would like to do it, but, you know, there is not enough mock-ups from the same fabric to prepare any reasonable amount of samples.
Q. I understand. And was the purpose of this study to dispute the fabric industry's claim that the washing of fabrics was not the most appropriate regulatory approach?
A. Mainly that was maybe the major purpose of it, to refute their claim that washing fabrics would not do any good, and second was a scientific reason. Nobody in the literature has done this and I thought it would be a valuable scientific piece of information for whoever wants to use it.
Q. And this is research you have shared at the Joint Venture?
A. Yes.
Q. Let's turn to the next page, it is stamped LI-02790, we're still on Exhibit 8 of the Wanna deposition. Let me read the second paragraph. "Issues not fully explored in the initial TSG studies, we agreed at the time

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without knowledge would make thing no better -- not good enough. We'll make things better --"
MR. PATTON: There is no "we".
Q. "Will make things better -- okay. Negative attention for safety." How would you improve on that reading, Dr. Wanna, if you can?
A. I don't think I can. You did very well.
Q. Thank you. Was the statement that I have just read, was that a position statement that Joint Venture was developing in this July 23, 1991 meeting?
A. I don't recall what context, I mean, it is so vague what he is writing. I can't recall the context of what he meant. It was not the position of the Joint Venture to -- the position, a better way of saying it, the position of Joint Venture was to discuss scientific issues of the shortcomings of the TSG and what should be incorporated in TSG.
Q. Was the Joint Venture a place where the industry could develop a

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universal position with regard to test method development or ignition propensity regulation?
A. I don't know if I agree with universal position. The Joint Venture was to look at the scientific issues relating to developing a test method and come up with one. That is it.
Q. Was the Joint Venture a place where the industry scientists could get together and come up with joint positions as to problems in developing an ignition propensity test?
A. You are still using joint. Each company had its own scientists, their own free thinking, and contributions as to what should be the issues involved in a test method, that is the extent of it. There is no conspiracy that we should take this variable and throw it out as not relevant. Each company and each scientist, whatever he thought the reasonable variable that should be included, openly said it or disagreed with other companies on certain things.
Q. Let's turn to the next page,

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and it is stamped LI-02791. I'll read the second paragraph, "Trump card -- do proposed modifications change smoke, tar, carbon monoxide, nicotine profile to raise health issues." Did the Joint Venture consider the health effects of low ignition propensity cigarettes to be a trump card to regulation?
A. Not to my recollection, no.
Q. Do you recall anybody using the word "trump card" in any meetings of the Joint Venture?
A. No.
Q. What discussions regarding the health effects of low ignition propensity cigarettes do you recall from the Joint Venture meetings?
A. I don't recall that that issue was discussed. I recall that there was a part of the bill, 1990 bill by Congress, to look at that issue, and I think one or two people from the Joint Venture attended a meeting. That's all.
Q. Besides the two people who attended, I think that is Dr. Hoffman and -- do

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you recall their names?

A. From the Joint Venture, I think Dallas and Alex Spears attended.

Q. Do you recall any scientists or doctors who attended any Joint Venture meetings to discuss the health effects of low ignition propensity cigarettes?

A. I remember Hoffman. That is not my area. I don't pay attention to what they say.

Q. Were you interested in what he had to say even though it was outside your normal area?

A. I was there and listened.

Q. What do you remember of what he said?

A. I can't recall. I don't know.

MR. PATTON: Are you sure Hoffman addressed the Joint Venture?

A. Not the Joint Venture, the TAG.

Q. I apologize.

MR. PATTON: Yes.

A. I thought you mentioned the TAG.

Q. Let me ask this. Do you recall any scientists or doctors from the health field that attended any Joint Venture meetings to discuss the health effects of low ignition propensity cigarettes?

A. No.

(Examination adjourned for the day.)

NOVEMBER 16, 1995

CONTINUED DIRECT EXAMINATION

BY MR. READ:

Q. Dr. Wanna, do you understand that you are still under oath?

A. Yes.

Q. Let's mark Exhibit 9 of Dr. Wanna.

(Wanna Exhibit 9 was marked for identification.)

Q. Do you recognize Exhibit 9 as your notes from a Joint Venture meeting of September 10, 1991?

A. Yes.

Q. In paragraph 2 you discuss a briefing by the Tobacco Institute and Karen -- do you see that?

A. Yes.

Q. Are the eleven items enumerated under there, are they items that the Tobacco Institute was going to do with regard to ignition propensity or were they items that the Joint Venture was going to do?

A. This is just information offered to the Joint Venture, no, it's not the Joint Venture mandated to do these things. It was suggested that the Joint Venture mandate was to look at the test method development and issues related to that issue. TI shared this information with the Joint Venture.

Q. And in part 4.c you write, "Dissention between CPSC and the Center for Fire Research, try to keep the tension." Did I read that correctly?

A. Yes.

Q. What was the benefit of keeping tension between the CPSC and Fire

Research. First of all, Fire Research, was that a reference to NIST?

A. Yes, I suppose.

Q. What was the purpose in keeping tension between CPSC and NIST.

MR. PATTON: Objection, lack of foundation. You may answer.

A. This is just information offered to the Joint Venture, you know, that is Karen's comments. And what I did here is I reflected what she said. It not a directive towards the Joint Venture to go and increase the tension or do anything about the tension. It's comments from the TI shared with the Joint Venture.

Q. What would be the benefit from having the Tobacco Institute try to keep tension between CPSC and NIST?

MR. PATTON: Same objection.

A. I don't know what, you know, the TI agenda is or what they're trying to do. I can't say anything and speculate. I am not involved with them.

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Q. What discussion was there among the Joint Venture meetings when Karen from TI discussed this idea of dissention between CPSC and NIST and trying to keep the tension?

A. I can't recall what kind of discussions occurred, but I repeat again what I said. This is just general information shared with the Joint Venture. No action was mandated to be taken, it was just information offered to the Joint Venture.

Q. Do you recall any comments among Joint Venture members when Karen from TI discussed these items?

A. I can't recall any comments.

Q. Why did you record this in your notes?

A. When I took my notes I tried to have a complete set of notes, a reflection of what happened at the meeting, for my own use.

Q. What was the relationship between the Tobacco Institute and the Joint Venture?

A. I don't know.

Q. As a practical matter what

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was the working relationship, based on your experience, having attended the Joint Venture meetings?

A. When I attended Joint Venture meetings, when I was there, Karen came and gave information like this in this meeting. That is the extent of it that I am aware of.

Q. Do you recall other visits by either Karen or other members of the Tobacco Institute to Joint Venture meetings?

A. I can't recall.

MR. PATTON: You can't recall or you can't recall that happening?

A. I can't recall that happening unless you go to the minutes of those meetings.

Q. Do you know who invited Karen to the Joint Venture meetings?

A. I don't know.

Q. Do you know what the purpose of Karen's presentation at the Joint Venture meeting was?

A. Again, this presentation is just general information shared with the Joint

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Venture from the TI.

Q. So as you under it, the purpose was just to share information of what TI was doing?

A. Yes.

Q. How did this information -- how was that to help the Joint Venture in its goals of developing a test method?

A. As it is presented here maybe it wasn't germane to the development of the test method, but this is nonetheless information related to fires, and maybe some of it is relevant to the bill, just general information. But the basic function of the Joint Venture was going back to the science and discussion of scientific issues.

Q. That is kind of where my question goes. If the basic function related to the science, how did this presentation from Karen from TI further the goal of the Joint Venture, the ostensible goal of the Joint Venture, of developing a test method?

A. This information was offered to the Joint Venture in the sense some of it may

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be related to the bill in general. Some of it may have no bearing on the Joint Venture as it is, but Joint Venture would know what is going on in terms of general information related to this issue.

Q. Was it your understanding that the Tobacco Institute was opposed to the adoption of a test method?

A. I don't know, I cannot speak for the Tobacco Institute. I don't know.

Q. Was the Joint Venture interested in preventing adoption of the NIST method?

A. The Joint Venture was not going out and attacking NIST on developing the test method, no. The Joint Venture was all about initially was going to work with NIST trying to come up with a good predictive real world test method.

Q. Did the Joint Venture ever do anything to increase or maintain any tension between CPSC and NIST?

A. No, I don't think the Joint Venture did anything to just increase the

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tension. All they did is when they gathered scientific information we shared with the TAG and NIST.

Q. On page 2 of Wanna Exhibit 9, three dashes up from the bottom it states, "Alternate fabrics. Develop a cotton or –" I believe that is rayon – "non-woven fabric." Is that what was meant, or ryan?

A. Rayon.

MR. PATTON: Just so the record is clear, the document says R-Y-A-N, but that appears to be a misspelling; is that right?

A. Rayon is a type of synthetic fabric.

MR. PATTON: But when you put "ryan" there, you meant rayon, right?

A. Yes, I misspelled it.

Q. Was this done in this time period?

MR. PATTON: Was what done?

Q. Was an effort made to develop a cotton or rayon non-woven fabric as an alternate fabric, and you can read the whole

thing before you answer, and see it in context.

A. From the notes that I took, Steve Spevac was offering some ideas on some other ways of looking at alternate fabrics, that is what it says. And his idea was to develop a cotton or rayon non-woven fabric.

Q. So that was an idea that Steve Spevac had?

A. Looks like, yes.

Q. My question is did the Joint Venture in this time frame follow up on that idea?

A. I can't recall what happened afterwards in terms of following up on these ideas. I have to go back through the notes or minutes to see what happened.

Q. As you sit here today do you have any memory of them following up?

A. No, I don't have any memory or recollection of what happened after this.

Q. Are the five fabrics that the Joint Venture is now having made, are those cotton on rayon or are they types of alternate fabrics that would be referred to here?

A. The five fabrics originated after we did the surveys, and we know that fabrics to be ignitable have to be 100 percent cellulosive, so rayon would not work, and so came out later those five fabrics.

Q. Are the five fabrics that are being constructed currently for the Joint Venture or just recently constructed, are they cotton and non-woven fabrics?

A. They're not being constructed now. We are trying to locate people who will contract them. They'll be 100 percent cotton.

Q. Will they be non-woven?

A. I can't understand the difference between non-woven and woven. I'm not in fabrics.

Q. That was my next question, but you don't understand the difference?

A. No, I don't understand the difference.

Q. Let's turn to the third page of the exhibit. The second half of paragraph 2 reads, "Low porosity increases carbon monoxide

and suspected compounds." Do you see that?

A. Yes.

Q. Then you continued writing, "Citrate reduces carbon monoxide and suspected compounds. Reduced circumference reduces carbon monoxide and suspected compounds. Expanded tobacco increases carbon monoxide and reduces suspected compounds." Did I read that accurately?

A. Yes.

Q. Is what you wrote a summary of Vello Norman's presentation of how smoke constituents change as you adopt some of the TSG parameters?

A. It looks like he presented some data and I wrote down what was presented.

Q. How did the Joint Venture receive that data or those results. Was it discouraging, were they encouraged by the results?

A. It was just results presented. I can't recall any comments made. It was just results being presented.

Q. You don't recall any

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comments there?

A. No.

Q. Let's mark number 10.

(Wanna Exhibit 10 was marked for identification.)

Q. I don't intend to spend too much time on number 10, Dr. Wanna. It is, I believe to be, notes from a member of B&W of the same meeting. And what I want to refer you to is on the first page it mentions that you gave a presentation at this meeting involving California Standard fabrics. And I just wanted your testimony regarding what you presented in more detail, if you could. The paragraph I am looking at is the second one from the bottom, starts with Joe Wanna. It may not have been a presentation, it may have just been a comment.

A. I am reading the context. It is not a presentation. As I recall it is just a comment because we were trying to locate alternate fabrics, I assume this is 1991 still, California Standard fabric, you could not obtain it anymore and we were trying to locate another source of fabric, and I suggested let's try to

find an alternate fabric, all cotton 13-15 ounces, 500 CORESTA permeability, and washed, plain weave with no texture.

Q. Let me back up and make sure I understand some of the basics. Is it correct that CORESTA set up a number of subgroups, one of them being a subgroup that would look at alternative fabrics?

A. Yes, we agreed currently there are two CORESTA subgroups looking at it and I was assigned to the alternative to California Standard fabric, to find one.

Q. And you were chairman of that subgroup?

A. Yes.

Q. How did you get to be chairman?

A. As I recall it, nobody told me you are chairman of the group. They told me arrange a meeting. Here they say I am chairman. I didn't know at the time, but they told me arrange a meeting and I didn't know I was chairman.

Q. Who told you to arrange the

melting?

A. I can't recall. They asked me to look into getting a meeting and finding alternate fabrics.

Q. How often did your subgroup meet?

A. We met one time.

Q. And was it the consensus of the subgroup to come up with this all cotton 13-15 ounce/yard 500 CORESTA?

A. After going around and discussing alternate fabrics we came up with this alternate fabric, 13-15 ounces, and suggested it.

Q. To the Joint Venture?

A. To the Joint Venture.

Q. Why did the Joint Venture decide on a higher porosity fabric?

A. From reading this paragraph, you know, here it says California fabric has about 4200 CORESTA, and so they would like to have a fabric within the same CORESTA permeability range.

MR. PATTON: John, I

thought you said why did the Joint Venture decide on a higher porosity fabric. I am not sure that the witness heard that or that that is what this document suggests. Did you mean to throw in Joint Venture or what was a misstatement?

MR. READ: I believe these are actually minutes of a Joint Venture meeting where this discussion takes place. Is that accurate, these are minutes --

MR. PATTON: That's not my point. I think you, well --

MR. READ: Okay.

MR. PATTON: There is a difference between a report being made about a CORESTA determination and the Joint Venture making a determination. I am not sure the witness understood that. Let's clarify the record.

MR. READ: Yes, so we all understand.

Q. Do you recall if the Joint Venture discussed what fabric should be used as an alternative to the California Standard?

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MR. PATTON: Again, that doesn't address my objection, John.

MR. READ: I will back up and start over.

MR. PATTON: Go ahead.

A. This is the report here, I mentioned it to the Joint Venture as a group. But this is CORESTA that met, and there are five -- six at the time -- tobacco industry members of CORESTA. So since they were there, I mentioned it to them what -- reported basically on when the group met, what message -- the suggestion was. But it is not the Joint Venture will decide on this fabric because that has to go back to CORESTA.

Q. Let me read you the sentence and get your understanding of it since you were at both CORESTA and the Joint Venture. The second sentence in the paragraph that begins "Joe Wanna" reads, "The group agreed that we need this fabric with a porosity of 4,000 to 5,000 CORESTA." Do you see that?

A. Yes.

Q. Do you believe that "the

group" is referring to the CORESTA group as opposed to the Joint Venture group?

MR. PATTON: Or vice versa?

A. I don't know. I can't recall whether it was suggested by the CORESTA group when we met or the Joint Venture.

Q. And your testimony is the reason that there is a higher porosity paper desired was so it could better match California Standard?

A. Higher porosity paper?

Q. Higher porosity fabric.

A. To match -- it sounds like what it is, because here they put as a not California Standard being put at 200 and desired fabric should have a permeability range in that same range.

Q. Were these fabrics ultimately obtained?

A. Not to my recollection. We couldn't locate such a fabric.

Q. And do you recall what types of tests you desired to run on these fabrics?

A. I can't recall what it was

designed to do or what kind of testing was planned for it.

MR. PATTON: Can we go off the record for a minute?

(A discussion was held off the record.)

Q. Back on the record, I have one additional question on this, Dr. Wanna, and that is when you couldn't obtain this type of fabric what did you do next as far as obtaining fabrics or testing?

A. I can't recall what the steps, further steps we took. I think 1992 we started the 500 fabric survey. Could be that.

Q. Do you recall any additional steps that were taken to find an alternative California Standard fabric after this effort was made?

A. I can't recall.

MR. READ: Let's mark Wanna Exhibit 11.

(Wanna Exhibit 11 was marked for identification.)

Q. Do you recognize Wanna Exhibit 11 as your notes of a November 14, 1991

Joint Venture meeting?

A. Yes.

Q. Turning to the second page, in the middle there is a discussion of a NIST proposal. Do you see that?

A. Yes.

Q. Is that a reference to a proposal by Gann to conduct air flow studies?

A. Yes.

Q. The last -- at the bottom of the page below all of the redactions it reads, "More work has to be done quickly using different flow rates, different cigarettes and different fabrics. Maybe use the 100 CORESTA series." And then it continues. Did I read that accurately?

A. Yes.

Q. My question is did the proposal by Dr. Gann to do air flow, is that what prompted you to write that work needed to be done quickly regarding flow rates?

A. I don't agree with that statement. It could be a separate subject not related to the NIST proposal.

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Q. Isn't it fair to say that when Gann made his proposal to study air flow, the industry or the Joint Venture felt that it needed to understand better what results Dr. Gann would obtain before they would be willing to fund that study?

A. I don't agree with that statement. Gann proposed a -- put forward a proposal to study air flow with no clear-cut experiment details, it was very vague, a very general proposal, and asked for a lot of money. And the industry was willing to work with him on understanding air flow, and we did our own experiments initially with GMJ and we knew a phenomenon that air flow causes reversals or causes test results to be different. And so we tried to work with NIST understanding that phenomenon, but NIST wanted to do the study and they put forward a proposal. It was very vague and a lot of money.

Q. My question is, why did you add the adverb "quickly" in the sentence I read that is in your notes which are Exhibit 11?

A. I can't recall whether those

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notes I took, whether it was said or it's my interpretation of what was going on. More work has to be done quickly, but maybe has nothing to do whether NIST is doing the proposal, funding the proposal or not. We needed to do more work on our own to understand air flow because we thought area flow was an important issue and we have to get a good understanding of it. I don't think it bears anything to whether we fund NIST or don't.

Q. It is your testimony that the proposal by NIST gave no urgency to -- no extra urgency to studies involving air flow?

A. In my opinion, yes, it was an issue that we needed to look into and do some work on.

MR. PATTON: Yes, you agree with his statement?

A. Yes, Gann's proposal had put no urgency on the Joint Venture has to go out and do more work.

Q. Were there any other events occurring in this general time frame that would have put an extra urgency on studies involving

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air flow?

A. I can't recall what other experiments were going on at the time. I can't recall, I can't say.

Q. Let's mark Wanna Exhibit 12.

(Wanna Exhibit 12 was marked for identification.)

Q. I believe these to be notes of Dennis Dietz of a Joint Venture meeting, I think the same Joint Venture meeting. Turn to page 2 of these notes, at the bottom of page 2. Let me try and read this, it is beside the 5 that is circled. "Gann proposal -- a step forward since recognizes air flow as a problem -- trap, then use air flow in method then cast in stone. -- Industry's point is reversal -- variable to explore not to fix -- possible trap." Do you have any explanation for why these statements would appear in the notes of a fellow scientist that attended the Joint Venture meetings?

A. No, I can't explain what he wrote down. It is his notes. I cannot

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interpret them or, you no, make comment on them.

Q. You, I believe, were at the meeting. What do you recall in conversations that would explain these notes?

A. When Gann submitted his proposal he gave a very general broad view on how to do air flow with no specifics into the proposal, and asked for, as I recall, half a million dollars, and asked for that large amount of money with no explanation of how the experiment would be done and what to use, and we thought it was not acceptable and we want more definitions, more details, and that is the extent of the discussion as I recall it. What prompted him to say that, I can't interpret it. It is his notes.

Q. I am particularly focused on this line, "variable to explore, not to fix." Based on your attendance at Joint Venture meetings, what explanation do you have for that appearing in these notes?

A. Still I don't have a clear, you know, connection to Gann's proposal to what he wrote down. We know air flow exists and we

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needed some more work to be done in terms of what the air flow should be or what is the air flow out in the real world. That is why we contacted with Dr. Clarke at UVA to measure air flow in the real world, but what he is referring to here I can't recall.

Q. In your experience in the Joint Venture were there any studies where the purpose was to explore problems but not to fix them?

A. I don't agree with that statement. We were looking at exploring problems and how they fit in towards developing a test method. Yes, if you find that air flow should be a set value, yes, we would try to find it. That is why we hired Dr. Clarke -- no, from UVA -- Dr. Ron Flack to measure air flow studies in the real world, because we want to get a handle on that.

Q. So it is your testimony that the hiring of Ron Flack was an effort to fix the air flow problem?

A. I don't know what you mean by the term "fix," a clear definition of it. We

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hired him to see what is air flow out there, to be realistic in the real world flow. If you want to do a test method reflecting real world scenarios, you have to have an understanding of what air flows are in a chair or in setting in a room, and so we wanted to explore that and see how later on that would fit in the development of a test method. If you might call it fix the problem may be you interpret it this way, maybe.

Q. Has the Joint Venture agreed that it should have a level of air flow that is similar to or based on what Ron Flack measured the air flow to be in crevices that had been heated or in chairs that had been heated?

A. I don't have a recollection that we agreed this is a set air flow we should use. But these are the air flows that are out there that we should explore. We have not reached a point we're going to choose 2 centimeters per second or minute, or 3, still it's yet to be decided.

Q. Based on your attendance at these Joint Venture meetings, what would be the best two examples you would give of a variable

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that the Joint Venture has fixed or solved as it relates to test method development.

MR. PATTON: I object to that question on the grounds that it's ambiguous, and I think ambiguous for reasons that came out prior to a B&W deposition. I won't get into that because I think you recall that testimony. But there is a difference between fixing a problem and fixing a variable, and your question mixes up the two.

MR. READ: I am not sure I understand the objection because I would be willing to rephrase if I -- I don't understand the ambiguity.

MR. PATTON: There is a difference between trying to understand something and fix a problem, and fixing a variable. Many variables affect this test. The wording you pointed the witness to is "variable to explore not to fix." Then you inserted in lieu of the word "variable" the question problem. And now your last question mixes up "problem" with "variables." So maybe you explore an area and you find that, like fabrics,

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it is a variable and you don't fix it or you fix it with more than one alternative or air flow, maybe up select one value or maybe you have to have more than one. But there is a distinction between exploring a problem and fixing a problem, and fixing a variable. I am just afraid that your question mixed up those two.

Q. Let me try to rephrase it then and see if I can do a better job. Still object if you don't like the way it comes out. Dr. Wanna, can you give me your two best examples of a variable that you believe the Joint Venture has fixed?

MR. PATTON: I have the same objection. What do you mean by fixed?

Q. Fixed in the sense of being able to account for it properly in a testing method.

A. Still -- still unless we reach a point where we have a test method, a clear picture of what it's going to be like, these variables I need to find. We have a limit range on what limit range there should be, like air flow, for example. We know what air flow

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from Flack's study, and there's no drafts in the room, it's a sealed room, we will have 5 centimeters per second air flow a minute. But if you have drafts you have to account for them. So we know this variable exists. We have a range or a limit on it, what Ron Flack reported. If you have drafts you have to account for them, so we looked into that and we know there is this variable, we know the fabrics is a very large variable out there. We don't know what the real world distribution of fabrics are out there, we're looking into that. Initially we selected those five fabrics to study. So these I can't say you fixed it, I don't know what you mean by fixed, it is a very general, generic term. But for variables, we are looking into these variables, we're trying to narrow them down.

Q. I believe at the end of your answer you said that you were trying to narrow down the number of variables; is that right?

A. The number of variables like in terms of fabrics. Initially we chose those five fabrics to look at. We cannot study all of

the fabrics that are out there, so we tried to select those five. Similarly air flow, we chose two or three values to study.

Q. Turning to the next page of Exhibit 12, it should be stamped LI-04093. In the middle of the page, the fifth dash down it reads, "What need for informed go/no go." Then there is another dash, "more data needed on input of air flow e.g. B&W reversals on G&J with increased air flow," I believe, "with air flow," that is right. "Need more on reversals other than B&W. B&W flat configuration." Does reading these notes refresh any recollection that would change the earlier questioning and answers that we had about the word "quickly" in your notes of Exhibit 107

A. Not really. I don't know what he was meaning here, what he was referring to in terms of those.

Q. Do you recall any discussions at the time of the Gann air flow proposal that more research would be needed about the effect of air flow in order to make an informed decision as to whether the Joint

Venture should go forward or not go forward with funding Gann's proposal?

A. Still I answer it, I view it as the Joint Venture needed to do more work to understand the air flow, more than one lab. But I don't think it was related to whether we accept Gann's proposal or not.

Q. At the bottom of the page under the heading Big Picture, it reads, "Gann recognizes that he ignored air flow variables. If we go forward must be confident of reversal, and do not knock out current brands." Do you read that any differently than I just read it, Dr. Wanna?

A. I guess not.

Q. Tell me the discussions that Joint Venture had regarding the impact of ignition propensity testing on current brands.

MR. PATTON: Assumes facts not in evidence. You may answer?

A. I can't recall any of the discussions.

Q. Do you recall any discussion on the impact that an ignition propensity test

would have on sales of current brands?

A. No, I don't recall any discussions.

Q. Specifically with regard to air flow, do you recall any discussions that the addition of air flow may make it harder for current brands to pass an ignition propensity test?

A. I can't recall any discussion towards that, no.

Q. Based on what I believe to be your attendance at the meeting these notes came from, what explanation do you have for this writing in this exhibit?

A. The Joint Venture found the issue of air flow to be a significant issue towards developing a test method. We explored it and we're trying to find out more reproducible data from different labs on the issue of air flow impact on results. What prompted him to write that, I have no idea. It is his notes. I can't speculate on his opinion.

Q. Do you have any basis to believe that Dennis Dietz would write personal

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opinions in his notes of Joint Venture meetings?
A. I can't answer that, I don't know.
Q. Let's mark Wanna Exhibit 13.
(Wanna Exhibit 13 was marked for identification.)
Q. Dr. Wanna, do you recognize Exhibit 13 as your notes of a Joint Venture meeting of January 28 and 29, 1992?
A. Looks like it's mine.
Q. Dr. Wanna, I want to refer you on page 1, the last sentence of the second paragraph. I believe it reads, "Jim Charles questioned whether having more TAG meetings or less is to our advantage. Let Gann flounder on his own." I know the copy is bad, but is that reading -- do you have any questioning of that reading?
A. No, it sounds okay.
Q. Why did you write the sentence, "Let Gann flounder on his own."
A. Can I read the whole paragraph?

Q. Certainly.
A. My sense is this is just general comments made and I wrote them down.
Q. So you believe that somebody made that comment?
A. I suppose, I don't know. I guess.
Q. Do you have any other explanation?
A. Can't think of any, no.
Q. Do you know why somebody suggested to let Gann flounder on his own?
A. This is just general comments or information, mainly comments people make, that's all.
Q. Was there an attitude among Joint Venture members to not assist Gann in developing a test method?
A. No, when we went in the Joint Venture and there are certainly four members on the TAG, we were willing to work with NIST, we had a lot of scientific meetings at NIST. We shared information with them, our findings with them, but Gann being, you know, I

guess in my terms an arrogant person, he disregarded that information. He wants to do things his own way, so that is it.
Q. Perhaps as a result of Gann's personality, by January 28 and 29 of '92, were there -- was there an attitude among Joint Venture members to not assist NIST in developing a test method?
A. I can't recall that we said, no, we are not going to work with NIST. I can't recall that. We always wanted to work with NIST and share information up to the last minute with NIST.
Q. The beginning of the next paragraph under Development of a Test, it reads, "Alex said it is possible to develop a test. (Very difficult to come up with one) to distinguish between extremes, but not worth anything for the middle range set." Do you agree with -- did I read that correctly?
A. Let me try. Alex said that it is possible to develop a test. I don't know what that last word is. I can't make it out.
Q. Okay.

A. Difficult to come -- I cannot make those words -- with one to distinguish between extremes. But not worth anything for the middle range set. It is, I guess, a comment he made. I can't make -- can't read the whole sentence in a clear way.
Q. Do you agree with Dr. Spears that it is possible to develop an ignition propensity test that would distinguish between extremes?
A. Until you have a test method and account for all the variables, I cannot say it's going to distinguish between the extremes or the middle range. You are putting the cart before the horse, in my opinion. I always had that philosophy, let's develop a test method that's reflective of the real world, accounts for the real world variables, and then we'll decide -- see what the test results are. My conviction has always been don't assume the results before you do the test, and I think many people do.
Q. I guess based on your efforts since 1987 in ignition propensity test

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method development, do you now believe it is possible, at least, to come up with a test that can measure or distinguish between high ignition propensity cigarettes and low ignition propensity cigarettes?

A. Your definition of high ignition propensity and low ignition propensity depends on the test method you use, and so far there is no good test method to make that distinction on.

Q. Do you believe it is possible to develop such a test method?

A. My conviction, yes, I am working on it and that is why I am working on this problem, to develop a test method.

Q. Do you believe that such a method would not be worth anything for cigarette in the middle range -- or let me change it to the commercial range.

A. I can't answer that. I don't know whether it would be valid for the commercial range or not without looking at the test.

Q. And I take it you are not

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close enough to developing a test method that you can start to see whether it would be valid or not, you are still too distant?

A. Yes, I cannot clearly answer that whether it is going to distinguish between commercial cigarettes or not.

Q. At the top of page 2 you write, there is a carryover part of a sentence and then it reads, "deliver a message to Congress," and then the rest is redacted. My question to you, Dr. Wanna, is was the Joint Venture there to lobby or influence Congress?

A. First I don't see the statement and --

Q. It's at the top.

A. And I can't make --

Q. It is still hard reading on my copy, but it may be a bit better.

A. But no, I think somebody made a comment as a Joint Venture involvement in science, we're there to look at science. Somebody made a message that we are out there to share the science to whoever wants to listen, and we shared it with NIST, TAG, CPSC, but Joint

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Venture was not a lobbying group.

Q. Let me make sure I understand your testimony. Your testimony would be that this was a statement by some member at the meeting, but that the Joint Venture did not lobby Congress or intend to send messages to Congress, is that accurate?

A. A better way to state it is a comment made by someone.

Q. And the second part is the Joint Venture, your testimony would be, did not lobby Congress?

A. The Joint Venture, was not their purpose to lobby Congress.

Q. As a matter of practice, though, did it?

A. I can't recall of any incident.

Q. The next sentence after the redaction reads, "Hugh Honeycutt said we should continue on the path of working --" I believe there is a "to" that is not photocopied -- "developing test methods."

MR. PATTON: Or "on"

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perhaps.

Q. Perhaps "on," there's probably a preposition there. Was there a need from time to time for some members of the Joint Venture to remind the other Joint Venture members what the true goals and purposes of the Joint Venture were?

A. Apparently some people were making comments and then Hugh said let's go back to do what we are really here to do, is work on the science and develop the test method. People make comments, you know.

Q. Based on your attendance at Joint Venture meetings, were those comments necessary because the Joint Venture had strayed, or were they unnecessary in that everybody was already focused and knew what the goals were?

A. I can't comment either way. I think people come into a meeting and make comments, and then they start working -- they know everybody is here to work on the scientific issues related towards developing a testing method. It is as simple as that.

Q. Do you believe that it was

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appropriate to remind the other members of the Joint Venture that the purpose of the Joint Venture was to develop a test method?

A. My opinion, everybody was aware of the purpose of the Joint Venture.

Q. And so these comments weren't necessary in your mind?

A. People make comments. I just had them in my notes. That's what people made comments about.

Q. Let turn to page 5 of Exhibit 13. You see the heading Tasks/Assignments?

A. Yes.

Q. The sentence just above that, could you read it?

A. "Valuable as a political piece."

Q. Why did you write that sentence, and you can read it in context if it will help your answer.

A. I can't recall the exact context of why I wrote it down, but the whole issue related to doing some more work to produce

some scientific data, and whether it being valuable as a political piece, maybe it is or is not. But we concentrated on the science and presented it to the TAG and CPSC, and maybe bring people up to what the real issues are.

Q. What do you mean when you use the phrase "political piece?"

A. I can't recall exactly what I meant when I wrote it down, but I said I gave a clear picture of that when we're doing larger studies, producing more data, and it be scientifically valuable, definitely scientifically valuable piece. Whether it is going to have a political impact on CPSC or TAG or NIST, maybe yes, maybe no. But the basic idea is to have good science behind it.

Q. Was any of the research undertaken by the Joint Venture done with an eye to how it would influence Congress?

A. I can't agree with that statement. It just was done because it was scientifically valuable.

Q. Let's mark Exhibit 14, which I believe to be Dennis Dietz's notes of the same

January 28, 1992 and January 29, 1992, Joint Venture meetings.

(Wanna Exhibit 14 was marked for identification.)

Q. Let me turn you to page 3 of these notes. It is stamped LI-02638, the second line from the bottom. It says, I believe, timing issue -- when do you pull trigger (Jim Charles). My question is do you recall any statements in any Joint Venture meeting as to what would be the appropriate timing of when to announce an alternative test method?

A. I can't recall any of that, what prompted him to write that. I don't know what he means.

Q. Well, at any Joint Venture meetings do you recall any discussions of whether it would be appropriate to wait to announce an alternative test method or whether one should be announced sooner rather than later.

MR. PATTON: You are not --

MR. READ: Let me back up.

MR. PATTON: The problem I

have is this document doesn't say what he meant by a trigger on what. If you are asking him irrespective of this document, the question I don't have a problem.

Q. What discussions do you remember at Joint Venture meetings regarding the timing of when to announce when the Joint Venture would announce an alternative test method?

MR. PATTON: Assumes facts not in evidence. You may answer.

A. An alternative test method, if you have it right now that is valid and reliable, we will present it. We are not waiting for a magic time or a magic hour to present it. Developing this method involves a lot of science and checking into variables, and it is premature to go out and present haphazardly a method. We want to be sure of the science. Any scientific data or any scientific studies we accomplished and did, and we're confident that this is the right scientific analysis has been done, scientific procedures have been followed, we present that information

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timely with the TAG and NIST. We don't wait for a magic hour, as I recall. So whenever we finished a study we've presented it to TAG or shared it with TAG.

Q. Is it your understanding that Brown & Williamson would announce an ignition propensity test method if it had developed one on its own?

A. That is speculation what would happen. I can't sit here and speculate, but if we have a test method we'll share it with everyone.

Q. Your testimony is that – let me start over. It is correct that the Joint Venture, if it had a valid test method, would announce it now, right?

A. My opinion, if they had a test method they would announce it.

Q. My question is if Brown & Williamson had a test method that it had developed on its own, would it announce it as soon as it developed the method?

MR. PATTON: I object on grounds of lack of foundation, but you may

answer.

A. If we have a test method we have to make sure it is confident. That would be our scientific opinion on it. We have to get other scientific people to share. They might have more input and we have to do a round robin study. No test method is valid without the round robin, so we have to announce it to get more scientific input into it, you have to make it more credible, you have to get reproducibility limits on it, repeatability limits on it, so you cannot really hide it in a closest and say it is our test method.

Q. Let me ask this. Based on your conversations with your superiors and others at Brown & Williamson, do you have any reason to believe that Brown & Williamson would withhold a valid test method on ignition propensity if it had one.

MR. PATTON: I object because that question assumes that he has had conversations on this subject, and I don't think that predicate has been laid here.

Q. Let me rephrase it. Do you

have any reason to believe that Brown & Williamson would withhold a valid test method if it had one?

A. That is also speculation. I have not discussed it with anyone.

Q. Do you have any reason to believe they would withhold?

A. My personal opinion, no.

MR. READ: Off the record.

(A discussion was held off the record.)

Q. Let's turn to the page stamped LI-02652 of Exhibit 14. It is about the fourth paragraph, I believe you called it, reads, "Air flow may not be important in the crevice configuration. Most cigarettes are in the crevice configuration." Is it – I guess my first question is, it true as far as you understand that most cigarette-caused fires start with the cigarette in a crevice configuration as opposed to a flat configuration?

A. I have heard suggestions to that effect from CPSC, but I have not seen any data, solid data saying yes, here's the

percentage in the crevice, here's the percentage in the flat, but that is what CPSC indicated.

MR. READ: Let's take a break.

(Break.)

MR. READ: Let's mark Exhibit 15.

(Wanna Exhibit 15 was marked for identification.)

A. Exhibit 15 is Bates stamped AT 42718 to AT 42720, and appears to be a letter from Boyd Fagan to Dallas Pinion with a two-page enclosure.

Q. Do you see the initials JTW in the right-hand corner?

A. Yes.

Q. Have you seen Exhibit 15 before?

A. I may have read it before. I can't recall it very well, but I may have read it.

Q. What who is United States Testing Company?

A. I don't know. It is a

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testing company. I don't know.

Q. Do you know what their expertise is?

A. No, I don't know.

Q. Do you know if they were retained by the Joint Venture?

A. Not to my recollection, they were not.

Q. Did you ever discuss with Dr. Pinion anything about the United States Testing Company?

A. Not to my recollection.

Q. When you received this letter did you ask Dr. Pinion anything about the United States Testing Company or why you got the letter?

A. I knew he went to visit some testing labs and he got this response and forwarded it to me to read for general information for me. That's it.

Q. Why did Dr. Pinion visit some testing labs?

A. I can't recall the exact reason for that.

Q. What do you recall generally to be the reason?

MR. PATTON: Maybe it would be helpful, have you had a chance to review this, Joe?

A. Let me read it.

MR. PATTON: You ought to read the attachment, too, unless you are already familiar with it.

A. No, I am not.

Q. Have you had a chance to read all of Exhibit 15?

A. Yes, I read it.

Q. Now that you have read all of Exhibit 15, does that refresh your memory on whether or not United States Testing Company was ever retained by either Joint Venture or CORESTA?

A. I don't recall it being retained.

Q. Do you know why they were not retained?

A. No, I don't know why.

Q. Having read all of Exhibit

15, what is your understanding of what the Joint Venture was considering retaining United States Testing Company for?

A. It is not spelled out exactly what to do, what kind of testing, but I can't speculate on what they were asked to do. I don't know.

Q. Did Dallas Pinion ever tell you what they were asked to do?

A. I can't recall having such a conversation with him on it.

Q. Did you ever hear anything about either retaining or not retaining this company?

A. There may have been some talk in the Joint Venture, but I can't recall exactly what the purpose of talking to them was.

Q. Do you recall if there were any individuals or companies that opposed retaining them?

A. I can't recall that discussion.

Q. Based on your review of Exhibit 15, do you know what CORESTA method

United States Testing Company was being asked to evaluate?

A. The time frame, this is 1992, CORESTA has performed some studies and they found that there was a lot of variability in their data. Now I don't know if they were referring to those or what, I don't know.

Q. You don't know then if this is referring to the CORESTA II study or the CORESTA III study?

A. No, I don't know.

Q. Let's mark Exhibit 16.

(Wanna Exhibit 16 was marked for identification.)

Q. Do you recognize this is as your notes of an April 23 and 24, 1992, Joint Venture meeting?

A. Yes.

Q. The bottom of the first page of Wanna Exhibit 16 under the heading Strategy, you write, Jim Charles thinks that our strategy should change from being strongly confrontational. Why did you write that. First of all, did I read that accurately?

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A. Yes.

Q. Why did you write that?

A. From my recollection there is a lot of discussions at the TAG meetings of scientific issues, and maybe people have conceived that the tobacco presented from the TAG were being delaying things or putting in delaying tactics, and maybe they were coming across as wrong in their presentation, so maybe that is what it meant.

Q. You would agree that this word "change" in what you wrote suggested the Joint Venture had been confrontational up to this point, would you not?

A. No, I don't agree we were being confrontational, we were presenting scientific data. And if other people were seeing you were being confrontational, it is their opinion. But all along we were presenting scientific data. And whether people will accept it at face value or will interpret it in different ways, that is their interpretation of it.

Q. The bottom of the second

page of Exhibit 16, maybe this will refresh your memory regarding Exhibit 15. It states, "United States Testing may be contracted to examine the five industry labs and look for variations. B&W and Lorillard still have to get approval." Does that refresh your memory of the story behind United States Testing?

A. It just repeats what I said earlier. I don't have a clear recollection of what United States Testing was asked to do. This goes along the same lines, maybe, to look at maybe some CORESTA variability studies. I'm not sure.

Q. Does the last sentence you wrote, "B&W and Lorillard still have to get approval," refresh your memory as to whether there was any opposition to retaining United States Testing from any particular companies?

A. I can't recall, but usually it is standard that whoever is presenting has to go back and check with his superiors.

Q. Did the other companies, American Tobacco, RJR, Philip Morris and Liggett give approval, do you recall?

A. I don't recall that.

Q. Page 3, the last sentence of the paragraph under the Fred Clarke presentation, do you see that. Do you see the Fred Clarke presentation?

A. Yes.

Q. The last sentence of the following paragraph reads, "What does the industry think is acceptable or can live with as a test method." Did I read that right?

A. Yes, you read it right.

Q. It had some handwritten notation, so I wanted to make sure I did. What is the answer. What does the industry think is an acceptable test method or a test method it can live with?

A. I am going to read the whole paragraph.

Q. Certainly?

A. Would you --

Q. My question is, what does the industry think is an acceptable test method or a test method it can live with?

MR. PATTON: I object to

the question on grounds of lack of foundation, particularly industry.

A. Here Fred Clarke made a presentation to the Joint Venture and wrote down what some of the comments he said. That's all.

Q. So is it your memory then that this sentence comes from the Fred Clarke presentation, it's something he said?

A. Most likely it is, yes. I am not sure, but it could be, yes.

Q. Was there any consensus or discussion in the Joint Venture meetings regarding what would be an acceptable test method or a test method the industry could live with?

A. I can't recall any of those discussions happening.

Q. Let me broaden it so it doesn't just refer to this meeting. In any of the Joint Venture meetings that you attended was there any discussion as to what would be the requirements for what would be the test method the industry could live with?

A. No, I don't recall any of

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those discussions. We were focused mainly on the science and developing a test method, not what the final outcome should be like compared to what should be passing or failing.

Q. Was there any discussion regarding what degree of correlation with the real world would be appropriate, whether 50 percent, 80 percent, 90 percent, or 99 percent?

A. I can't recall that being discussed.

Q. Was there any discussion as to what level of reproducibility would be acceptable for the industry, whether 50, 70, 80, 90, 99 percent?

A. I am not a statistician and I would hate to delve into that. The Joint Venture mandate was to come up with a test method. Once we have that, the most logical step is to go to larger a data set with different labs to make a round robin and get your reproducibility limits. Not being a statistician, I don't know these things.

Q. I was not asking for your personal opinion on what would be a valid test

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method or what would be an acceptable level of reproducibility. My question is were there any discussions in the Joint Venture as to what would be an acceptable level of reproducibility or a level of reproducibility the industry could live with?

A. I can't recall any of those discussions.

Q. What does ruggedness mean with regard to test method development?

A. Ruggedness, when NIST proposed the test method with the duck fabrics, and our lab when we ordered more duck fabrics to do more testing and we found out that there were not producing similar results to what NIST came up with, and so we got more fabrics and we did more work and found there was a big variability in the duck fabrics from batch to batch. And when we did the work and published the work, the term ruggedness – and choose the word – ruggedness means variability, in my opinion. I am not an expert in English, but that is what it means to me.

Q. Let's go back to page 1 of

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Exhibit 16. Look at the sentence you wrote where it states, "Jim Charles thinks that our strategy should change from being strongly confrontational." What did you mean by the word "strategy" when you wrote that here?

A. I can't recall whether it is my choice or, you know, but, you know, some of the comments he made I wrote them there.

Q. When you decided to note for your records this statement by Jim Charles, what was your understanding of what Mr. Charles meant by the word "strategy?"

A. I thought I answered the question earlier that we presented data towards NIST, scientific data, and maybe they looked at it as being delaying tactics from the industry and as confrontational. So that's the way they looked at it. In my opinion should keep on the same path, produce scientific evidence, and present it to whoever is to listen.

Q. I understand that there may have been those on the TAG or NIST that viewed the Joint Venture as being confrontational. My question was, and my problem is that strategy to

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me connotes a choice by the Joint Venture to be confrontational. And so let me ask, was it your understanding that Jim Charles was suggesting that the Joint Venture should not chose to be confrontational with either NIST or the TAG?

A. In my opinion, the Joint Venture was not confrontational and these are Jim Charles' remarks. Maybe in his view it was confrontational, but the Joint Venture in my opinion was not confrontational. We were cooperating and producing data and were sharing them.

Q. Let's mark Exhibit 17.

(Wanna Exhibit 17 was marked for identification.)

Q. Dr. Wanna, do you recognize Exhibit 17 as being your notes of a February 26, 1993, Joint Venture meeting?

A. Yes.

Q. I had a question in the second paragraph of the first page. Could you read that paragraph to yourself first and tell me when you have read it?

A. Yes, I have read it.

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Q. What did you mean in the second sentence of that paragraph when you wrote, "Hence this indicates that NIST's data from the TSG study is not good, it should be worse."

A. Sitting now looking at it I can't recall the exact context of the whole conversation looking at the data, but the TSG study, the data there was not a base from or came out from a good plan or study and I can't speculate on what the TSG data they were looking into.

Q. What does the phrase "it should be worse" refer to. Is that an error or does that have some meaning that I don't grasp?

A. I don't recollect when I wrote it down. We no that TSG was flawed in their analysis of the data. I maybe made that comment on my own, I am not sure. I can't recollect exactly what the context of the conversation was.

Q. Can you explain to me why "it should be worse?"

A. I said I can't recall what

the context of the conversation was, I made that comment on my own or if someone said something, I can't recall that.

Q. Mark Exhibit 18 of the Wanna deposition.

(Wanna Exhibit 18 was marked for identification.)

Q. Are these your notes of a June 10, 1993 Joint Venture meeting?

A. Yes.

Q. Turning to the second page, eight lines down, it states, "We have to provide the data, it is a question of timing and limitations on the data set on how to analyze the data." Can you explain to me what you meant when you wrote that?

A. I will read the whole paragraph.

Q. Certainly.

A. From reading the paragraph it may reflect the data from the 500 fabric survey.

Q. Right. And this data was going to be provided to – first of all, who is

Terry Kissinger?

A. I think he is the statistician at CPSC, I am not sure. I am speculating that he is at CPSC.

Q. And is it correct that CPSC had asked for data on the 500 fabric survey?

A. I don't know if they asked for it or not.

Q. You don't remember if they asked for back-up data?

A. No.

Q. Why was the provision of data to the CPSC – let me rephrase. Why was the provision of data relating to the 500 fabric survey to the CPSC a question of timing?

A. I don't know what, you know, the context of it here. I guess we wanted to analyze is data first, our data before we provided it. I don't know.

Q. Do you know what you meant by limitations on the data set?

A. No, I don't know what I meant.

MR. PATTON: I think you

may be reading that out of context. Limitations on the data set on how to analyze the data.

Q. Does that put it in better context to read that all together.

MR. PATTON: Do you recall if it goes together, I guess is the question.

A. I can't recall the context of the conversation.

Q. Is there anything that would refresh your memory?

A. If I see more written notes on it, maybe.

Q. From somebody else, maybe?

A. I don't know.

Q. Let's mark Exhibit 19.

(Wanna Exhibit 19 was marked for identification.)

Q. Exhibit 19, are these your notes from an August 31, 1993, Joint Venture meeting?

A. Yes.

Q. Turning to the third page of Exhibit 19, could you read for me what you wrote just below the portion of this page that has

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been redacted. I believe the first word is Dave.

A. Yes.

Q. Could you read that out loud, please?

A. "Dave said that Moakley will do something, we have to develop something meaningful. Some fabrics give TSG type ranking some do not, maybe including air flow and then weigh them according to usage, then Moakley can focus on that. Show Moakley that a meaningful test method will not solve this problem. A meaningful test will compress the discrimination among cigarettes." Go on?

Q. That's fine. Do you agree that a meaningful test will compress the discrimination among cigarettes?

A. I cannot agree or disagree what a meaningful test method will do unless you have a test method, so I cannot speculate on what a meaningful test method will do.

Q. Is it a -- is the Joint Venture working to develop a test that would compress the degree of discrimination among

commercial cigarettes?

A. I don't agree with that statement. The Joint Venture is developing a test method. It is also speculating and putting the cart before the horse and what the result should be before the test method is being developed, and we don't want to fall into that having set a result and then go backwards and develop a test method.

Q. What has become of this idea of Dave Townsend's to have a test that includes air flow and a number of fabrics that are weighed according to usage?

A. His idea?

Q. Yes.

MR. PATTON: Assumes facts not in evidence.

A. I don't see it written here that he said that.

Q. Do you recall any discussions by Dave Townsend that a test method should include multiple fabrics that would be weighted according to their percent usage and that they should have air flow included?

A. He may have said that in a Joint Venture meeting.

Q. Do you recall that specifically or --

A. I can't recall the specifics of it. Generally I recall he being mentioned that.

Q. What has come of that statement by Dave Townsend. Is that the way the Joint Venture is currently working or not?

A. He made a statement to that effect. It was a general statement but he didn't put any specifics on the table. But, you know, the Joint Venture is working towards developing a test method, and these issues that he mentioned actually were going to be included anyway.

Q. So the Joint Venture is working to include those items in a test method?

A. The Joint Venture will include all items that are relevant towards ignition propensity and may reflect any -- have reflection on real world incidents.

MR. READ: Let's mark

Exhibit 20.

(Wanna Exhibit 20 was marked for identification.)

Q. Go back to your time at American Tobacco when you were reporting to Dr. Pinion. The first page of Exhibit 20, the cover memo from B. Price, summarizes testing performed by the research section. Do you see that?

A. Yes.

Q. How is the research section different from or -- first of all, was the research section different from the product development section or was there a special product development section?

A. I don't know, I can't answer the question. I don't know how it was divided.

Q. You worked in the research section, correct?

A. Yes, I worked in research.

Q. What was the group or the name of the group that did product development in cigarettes?

A. I don't know if there was a group or some people -- I know some people

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worked in product development. I don't know if you call it a separate group or research section. I never saw a chart with the dividing lines of the company.

Q. Who were the people that worked in product development?

A. Mr. Chumney, John Anders, those are two names I recall.

Q. And you don't remember they had a special section name?

A. I can't recall that, no.

Q. The second page of Exhibit 20 appears to begin a memo that you co-wrote. Do you remember this memo?

A. I have to read it.

Q. Okay.

A. I cannot testify or say this is my words or not. I don't know who wrote them. I can't be sure.

Q. Did you work on this memo with others?

A. Maybe I worked on some parts of it, yes.

MR. PATTON: Are you going

to get into details of this memorandum?

MR. READ: A little bit.

MR. PATTON: You probably ought to review it, Joe, and refresh your recollection of it.

A. (Witness does as instructed.) Okay, I have got it.

Q. Now that you have had an opportunity to read Exhibit 20, can you tell me generally why this report was written and what was its purpose?

A. I may have contributed to some sections on it on heat flux or IR camera, but I don't know the exact purpose of it. It looks like a summary of TC-129RA model cigarette.

Q. Did you have any involvement in the testing of this cigarette?

A. I did the testing on the copper plate and the IR camera. It was still 1987 and I had been there a few months, so that is my initial trials with the copper plate and the IR camera.

Q. What does the TC stand for

in TC-129RA?

A. Up to now maybe I cannot answer that. I don't know what it stands for. That is the cigarette, maybe. I never asked that. Never occurred to me to ask.

Q. In the second paragraph of page 2 of Exhibit 20, it refers to the cigarette paper having a CORESTA unit of 10 and then being electrostatically perforated to give it a permeability of 100 CORESTA units. What is the advantage of doing that to a cigarette rather than just originally having a cigarette with 100 CORESTA units of permeability?

A. That involves more explanation that I am incapable of explaining when it comes to burn rate of the cigarette, you know. Having a higher percent original permeability makes a difference in terms of air flow into the cigarette, how it burns compared to electrostatically perforated. I am not an expert so I cannot explain it. I know there is a difference.

Q. Let me make sure I understand. Is it true that there is a

difference between a cigarette with a CORESTA paper of 100 permeability and a cigarette that had a paper with a 10 CORESTA permeability that was then electrostatically perforated up to 100. Do they burn differently or the same?

A. I can't speculate on exactly how they would burn, but I think there may be a difference in the way they burn.

Q. And do you know why there is a difference?

A. No.

Q. Do you know why the consumer acceptability of this cigarette TC-129RA was -- do you know why consumer taste tests were given of this cigarette, TC-129RA as opposed to other test cigarettes?

A. I don't know, I don't know.

Q. Do you know what the goal of such testing was?

A. I don't know. I can't speculate what the goal was.

Q. You are relatively new to the company at this time?

A. Yes.

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Q. Did you ask anybody why this cigarette was being taste tested?

A. No.

Q. Do you know if this cigarette had any flavorings added to it?

A. I don't know.

Q. Did you -- was it recognized at American Tobacco at this time that crevice testing gave different results from flat testing?

A. From reading this, apparently was differences, yes. Flat apparently gave more ignitions than crevice in this report.

Q. I have seen in later work that you have done additional studies with crevice versus flat testing and the different results. What have you learned through those additional experiments about the differences between crevice and flat testing than what was known at this time?

A. Up to now this testing has been done according only on one fabric, which is California type fabric and cotton batting. And

cotton batting is completely different than foam, and cannot buy cotton batting anymore. So when you compare this you can't really compare it to what we know now in terms of crevice because of doing it on foam. The fabric is different. Now what I know from my recent work, there is a difference, but as I mentioned yesterday it was still preliminary work which we have done and there's more plans to expand on it.

Q. Let me make sure you understand all of that. One additional thing you have learned through subsequent testing is that there is a difference between crevice and flat configuration, not just with California Standard but with other fabrics?

A. Yes.

Q. And I guess if you could explain again what you learned in addition to that, that there is a difference between other fabrics, I would appreciate it.

A. If you take a flat mock-up and test on it and same cigarette tested in a crevice, you get different results. We're using

foams. I mean, to go forward we have to do a larger number of replicas to get reproducible results and maybe include other labs to see if they see the same differences as at our lab. That is the scientific way to approach it. That is all I know now.

Q. Can you turn to page 11 of your memo, which would be page 12 of Exhibit 20.

A. That's not my memo, I didn't write it.

Q. You are listed as a partial author. I will rephrase it.

A. Yes.

Q. Turning to page 12 of the exhibit, the last sentence of that page refers to a separate memo to W.J. Moore. Do you know what his position was at that time?

A. I don't know. I was new to the company. I don't know.

Q. You were at American Tobacco a number of years. Did you ever meet Mr. Moore?

A. I can't recall meeting him.

Q. Do you know if he was in the

Marketing Department?

A. I don't know.

Q. Do you recall any feedback from any of your colleagues regarding this memo in this time period?

A. No.

Q. Do you know if any decisions were made at American Tobacco based on the information in Exhibit 20?

A. I can't recall any of the feedback or things. At the time I did the testing on the heat flux and IR with the camera and reported my findings.

Q. Who is Mr. Chumney, R.D. Chumney?

A. He was -- I don't know the exact title for him, but he was in product development. I don't know what -- when I was -- in 1987 when I was at American Tobacco I didn't know what title he has.

Q. Is he currently with Brown & Williamson?

A. No, I think he retired. I imagine he retired.

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Q. And B.F. Price?
A. Yes.
Q. Who was he?
A. When I joined he was a section manager.
Q. Of what?
A. In the research section.
Q. And has he gone to Brown & Williamson?
A. Yes, he is currently with Brown & Williamson.
Q. Looking at the cc line, is RSS Mr. Sprinkle?
A. Yes.
Q. Who is PHL?
A. I think it is Preston Lee.
Q. And he has retired, has he not?
A. Yes.
Q. Who is ECC?
A. I suspect this is Everett Cogbill.
Q. Do you know if he resides in the Virginia area?

A. No, I don't know.
Q. Do you know where he resides?
A. I don't know.
Q. And do you know where Mr. Chumney resides?
A. I don't know, either.
(Wanna Exhibit 21 was marked for identification.)
Q. My question with regard to Exhibit 21, Dr. Wanna, regards the last line where I think it reads, "hoping maybe these will generate a damage index S curve." Do you see that?
A. Yes.
Q. What is a damage index S curve?
A. I don't know. I don't know what it means.
Q. Are these -- is this from your notes?
A. No, it is not my handwriting.
Q. Do you know whose

handwriting it is?
A. No.
MR. PATTON: Was this produced as this single page?
MR. READ: I think it was part of a larger document, but I think it was from his files.
Q. Did you ever test the Ecusta damage index?
A. Ecusta damage index. Is that a test method you are referring to.
Q. Yes, the Ecusta test method. Did you ever use that or evaluate it?
A. I recall in my lab, what they reported to us, we tried something like that. But I am not very familiar with it.
Q. As a matter of science, though, you don't know -- the term S curve doesn't have any --
A. I know what an S curve means, but it is very broad.
Q. Why don't you tell me what an S curve is graphically?
A. Graphically this I and S

curve. I am not very artistic. That's an S curve.
Q. We'll mark that as Exhibit 22 so there will be a reference in the records. It looks like an S?
A. Yes.
MR. PATTON: The only problem with that, John, there are some extraneous notes he made yesterday when he was trying to determine when he worked at various positions during what time periods.
MR. READ: If you want to redo it on a clean sheet of paper I don't have any objection.
MR. PATTON: The record now reflects that, so it is probably good.
Q. Why don't you draw an S curve on a clean sheet of paper and we'll mark that as an exhibit.
(Wanna Exhibit 22 was marked for identification.)
MR. PATTON: While he's doing that, let's go off the record for a minute.

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(A discussion was held off the record.)

(Wanna Exhibit 23 was marked for identification.)

Q. We have marked Exhibit 23. Is this a memo you wrote on or about April 26, 1989?

A. Yes, it looks like it, yes.

Q. Turning to page 4, is it fair to say that at that time you thought the heat flux and infrared camera measurements were valuable and that they were simple and inexpensive test methods?

MR. PATTON: That's a compound question.

Q. Is it fair to say that at this time, April 26, 1989, you saw value in the heat flux and infrared camera measurements?

A. Let me read the conclusion, please. Could you repeat the question?

Q. Let me do it more broadly. What were your opinions of the heat flux and infrared camera measurements as of the date of this exhibit, April 26, 1989?

A. As of that date when I was

doing this work, I thought that heat flux and the IR camera could be simpler ways, a secondary test method to look into ignition propensity. That is the extent of it. I was still experimenting with them and collecting data.

Q. So you viewed them as useful tools in measuring ignition propensity; is that fair?

A. I wouldn't call them as useful tools in measuring ignition propensity. As stand alone, no, they're not useful at all. We have to have initially a primary test method and then maybe try to correlate those to that. But it was something I was trying to do, an idea came up with that, trying to collect some data using those two methods and see where it leads.

Q. But at that time you viewed those methods as giving relatively good correlation; is that fair?

A. I don't know what you mean by relatively good. Here reading from page 3, Still in both techniques gray areas occur where intermediate values exist and predictability of burn tests still is not very

good." I am still putting qualifiers into the report and I am starting to doubt the value of these two techniques.

Q. Were the doubts involved in the middle range as opposed to the extreme ends of cigarette ignition propensity?

A. Unless I have the data I can't really recall, comparing actual burn tests on mock-ups versus this. And keep in mind this was done only on California and I think batting and foam, so I can't recall.

Q. You used the term "intermediate values" and that was the genesis of my question. What did you mean by intermediate values?

A. I don't know whether it meant intermediate values on the mock-up side or the heat flux index or IR camera. Unless I have a full set of data to compare, I cannot answer the question.

Q. But you believe this memo accurately states your views as of April 26, 1989, regarding the value of the heat flux and infrared camera measurements?

A. As of that time maybe it reflected my views.

Q. And your views have changed subsequently?

A. Yes.

Q. Let's mark Exhibit 24.

(Wanna Exhibit 24 was marked for identification.)

Q. Does Exhibit 24 attach a report you wrote on ignition propensity?

A. Yes.

Q. And that report was written on or about October 10, '89?

A. Yes.

Q. And in this report you do start to question a bit more strongly than in the previous exhibit the heat flux and the infrared camera methods, correct?

A. Yes, I'd have to go and read it again to see if it reflects that, but -- I mean, this came, I think, slightly October and this came in April, and subsequently I brought this up afterwards.

Q. Do you recall why you were

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asked to write this memo?

MR. PATTON: Assumes facts not established. You may answer.

A. I can't recall why.

Q. Were you asked to write this memo?

A. I can't recall. I can't recall that.

Q. Was it because of the institution of the CORESTA Task Force that you were asked to write this memo?

A. I don't believe that that is correct. I was working, had been two and a half years with American Tobacco and I have been doing this work, and my boss wants to know what I have done. I mean, why are we paying you this salary, so I wrote this up, what I have been doing.

Q. So this memo would reflect at that time your views of what you were doing and where test method development work stood at American Tobacco?

A. Yes.

MR. READ: Let's mark

Exhibit 25.

(Wanna Exhibit 25 was marked for identification.)

Q. This is a page from your file, Dr. Wanna, and I also believe it is an attachment to interrogatory responses from American Tobacco. My question, Dr. Wanna, is do you know why there is the fluctuation in the number of cigarettes tested from year to year?

A. I don't know.

Q. Let me make sure I remember -- let's go off the record.

(A discussion was held off the record.)

Q. Do you know what Exhibit 25 is?

A. I guess I do. You tell me it is identified again as coming up from the first interrogatory at American Tobacco.

Q. Did you participate in the answering of those interrogatories?

A. Yes, I did.

Q. Did you participate in the answering of questions regarding how much product testing, product development there had

been at American Tobacco from '85 to '94?

A. I participated with other people, so --

Q. You were at American Tobacco from 1987 to 1994, correct?

A. Yes.

Q. And looking at the line of number of cigarettes tested?

A. Yes.

Q. Or column?

A. Yes.

Q. Why did the number of cigarettes drop from 2,500 in 1988 to 682 in 1991?

A. I can see that it dropped and then increased substantially in '92 and '93. Number of cigarettes tested, I guess, depending on how many ideas people come up with. There is no magic that, okay, we have a set number of tests to do or anything. It's just ideas people come up with, we try them.

Q. So your understanding is that there were more ideas in '88 and '92 than in '91?

A. It may reflect that, yes.

Q. I take it 1994 is smaller in part because it is a partial year. Do you know why else it is a smaller number than 1993?

A. No, I don't know why.

Q. Did the activities of the TAG and CORESTA and Joint Venture have any impact on the number of cigarettes that were being tested during this time period?

A. I can't find a correlation, I don't know.

MR. READ: Let's do one more here. This would be Exhibit 26.

(Wanna Exhibit 26 was marked for identification.)

Q. Do your recognize Exhibit 26 as your notes of a March 29, 1993 Joint Venture meeting?

A. Yes.

Q. On the second page in the middle of the page, do you see the paragraph that begins "additional work? "

A. Yes.

Q. Two lines down from that it

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reads, "Townsend said that we should invalidate the test because it uses one fabric only, what do we gain by blowing duck out of the water." Did I read that right?

A. Yes.

Q. Do you recall any discussions along that line?

A. I can't recall any discussion along those lines. It could be it's a comment he said.

Q. Do you know what the context was of how that was said or why that was said?

A. Let me read the whole paragraph. I can't recall the context of the whole conversation, but I guess from reading this it is the comment he made.

Q. Further down on page two there is a discussion that a flip chart was brought to write down points of concern, and then there is a list of a number of items.

A. Yes.

Q. My question is, was there ever a flip chart or an effort made to catalog in a Joint Venture meeting all of the steps that

it would take to develop a test?

A. A flip chart was brought in, reading this list, to see what factors that may influence an ignition test method, what goes into a test method, and what people -- it is like a brainstorming session.

Q. Was this brainstorming session to find points of concern with the NIST test?

A. No, I don't think it was oriented towards finding flaws in the test method, it was oriented to what a test method should -- what other variables people think should go into a test method, and people started throwing out ideas.

Q. What is your explanation for the listing on page 3 of items such as smoke chemistry, consumer acceptance, smoke toxicity, smoke topography?

A. This is a flip chart, people were sitting there throwing ideas around, and they were recorded on a flip chart and that is it.

Q. How do any of those items

relate to the development of a test?

A. They don't relate to the development of a test method, but people say ideas, nothing wrong with stating ideas.

Q. Further down about the middle of page 3 it reads, "Narrow range of materials that discriminate. Existing test more harm than good." What is your explanation for having written those two items in your note?

A. Could be further ideas people threw out. I don't recall what they meant by writing them. I could be they're also flip chart notes, I don't know.

Q. This would be further ideas from the brainstorming session?

A. It could be, I can't recall.

Q. What was the existing test that was being referred to here in your notes?

A. I can't recall the exact context of the conversation and what it meant. I don't know.

Q. Was there any existing test other than the test that you understood NIST was proposing or was having round robins about at

the time?

A. I can't think of any other test, but I don't know if that is what it was referring to or not.

Q. My question is, if it is not referring to that what else could it be referring to?

A. I can't speculate, sitting here and now, at the time.

Q. This memo or these notes were taken in March, 1993. Do you recall any earlier brainstorming sessions in the Joint Venture about the items the Joint Venture members should consider in developing a valid test method?

MR. PATTON: I am sorry, could I have that question read back, please?

(The requested portion of the record was read by the Court Reporter as follows:

Question: This memo or these notes were taken in March, 1993. Do you recall any earlier brainstorming sessions in the Joint Venture about the items the Joint Venture members should consider in developing a valid test method?)

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Q. Let me break that up.
Exhibit 26 was written in March, 1993, correct?
A. Yes.
Q. Prior to that time did the Joint Venture ever have a brainstorming session to enumerate the items that it would need to consider in developing a valid test method?
A. I don't recall sitting here now unless I go to minutes from those meetings or my notes. I don't recall. There were maybe some other brainstorming sessions, whether they before 1993 or after that.
Q. We have reviewed the majority of your Joint Venture notes during this deposition. Having just recently reviewed those, do you have any memory of another brainstorming session?
A. From what we reviewed, no.
MR. READ: Let's take a break.
(Break.)
Q. Back on the record, why were other companies such as paper companies not included in the Joint Venture?

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A. The other paper companies were included in the broader unit of CORESTA and the Joint Venture was mainly the tobacco industry, a smaller group that would meet more frequently, and that is the only reason I can think of.
Q. Why weren't the U.S. paper companies invited into the Joint Venture. Was it again to keep the Joint Venture small?
MR. PATTON: I object on the grounds of lack of foundation, because I am not sure he is speaking from personal knowledge as opposed to just speculating as to what he thinks reasons might be. You may answer the question.
A. Again, I thought I said they were included in the CORESTA Task Force. They were represented there.
Q. Do you recall any discussions in the Joint Venture about whether or not other companies should be invited into the Joint Venture besides just the cigarette industry?
A. I can't recall any of that

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discussion.
Q. Why did the attorneys attend the Joint Venture meetings?
A. I think attorneys attended the Joint Venture meetings so that no proprietary issues were being discussed.
Q. Did they have any input into the development of test method work?
A. I don't know what you mean by input, but we discussed scientific issues and sometimes they would make comments. That is the extent of it.
Q. But as you saw it their purpose was solely to prevent the exchange of proprietary information?
A. That's my personal opinion.
Q. How important is the development of a test to making low ignition propensity cigarettes?
A. Without a test method I don't know what you mean by low ignition propensity cigarettes. The term doesn't mean anything unless you define it in a context of a test method.

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Q. So then would it be fair to say that without a test method there cannot be product development of – let's change the term to fire safe cigarettes.
A. It's still confusing. What you term as a low ignition propensity or fire safe cigarette, but I don't see how you determine this is a low ignition propensity cigarette or fire safe cigarette if you don't have something to measure it with. In my opinion I don't see how you can say that.
Q. So is it fair to say in your opinion a test method is essential?
A. In my opinion, yes, a test method is essential.
Q. Has anyone ever told you either orally or in writing that either the CORESTA Task Force or the Joint Venture should slow down its test method work?
A. No.
Q. Why do you believe NIST proposed such a flawed test?
A. That's speculation on my part. I don't know why. My opinion, my

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personal opinion is Gann had the '87 TSG results and he just wanted to duplicate them. That's my personal point of view.

Q. Why was NIST resistant, in your opinion, to the industry's arguments regarding the flaws to the NIST test?

A. I don't know, I don't know why.

Q. Do you know of any motive NIST had to reject the industry's arguments?

A. Again, I don't know what is the motives, I don't know.

Q. Why was it so important for Gann to duplicate the '87 TSG rankings?

A. I don't know why, you know, I didn't talk to him about why he was doing what he was doing. Also again, my personal opinion, he had those results he didn't want to just value them or through them out. And it was took a shortcut trying to reproduce them, to cut down his work load in that time frame, I don't know.

Q. If the Joint Venture came up with a test method how would it show or against what would it correlate its results to show that

its method was a valid, real world method?

A. Sitting here now I cannot answer that. I don't know how the final picture would look like. I don't know.

MR. PATTON: I am not sure that was his question. He is not asking what the final test would look like. How do you know you have got a good test, I think is what he's asking.

A. Oh, once the Joint Venture comes up with a realistic or a test method that affects your work issues, we think all of the variables that should be accounted for are accounted for, we just do like a round robin and then relay it to a statistician to analyze it, then, you know, to me then it is other people's opinion about the validity of the test method, statistical data analysis.

Q. Isn't it true that the round robin would show you if there is variability within the test or if there are variables you have not accounted for?

A. I am not a statistician, I don't know when they do a round robin what they

look for. I don't know.

Q. As someone who has been working since 1897 on test method development, what is the purpose of doing a round robin?

A. In my opinion the purpose is to look at repeatability and reproducibility data.

Q. So my question was, how does the Joint Venture know that the test method it comes up with is a real world test method, ranks cigarettes as they would rank in the real world?

A. That is also speculating, and unless we have a test method that includes all the variables that we are currently looking into, I don't know how it is going to be, you know, what further testing, once we have that, to carry on to see if it translates to the real world experiments. So currently what we doing is looking at the variables that should be accounted for, the ranges that should be looked into, and I think these should be included in the test method. And then when we reach that stage I think we will look at further developments or testing of that. That is

speculating on my part.

Q. I understand that Dr. Gann felt that the TSG results were a yardstick against which he could measure his test, and if they correlated to the TSG results that would be good enough. But I'm still unclear -- does the Joint Venture need to develop a yardstick that would -- against which it could measure its results to make sure they are real world?

A. These are further discussions before the Joint Venture to carry on down the road.

Q. In your opinion as somebody who is working on this issue, is that something that the Joint Venture still needs to do?

A. I cannot answer that now as to what yardstick should be used. We are working on developing a test method and what variables should be included in this test method.

Q. How do you know what progress you are making on developing a test method if you don't know what yardstick you're measuring it against?

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A. The progress you make is looking at what variables should be included. That is the first step, that is to build your foundation in terms of fabric variability, what is out there, air flow, environmental conditions, can you get those materials in a reproducible manner. Unless you solve these issues now, I don't see how you can go down any further.

MR. PATTON: Let's go off the record for a minute.

(A discussion was held off the record.)

Q. Dr. Wanna, back on the record. Why is it that the Joint Venture would not fund Dr. Gann's air flow proposal?

A. I addressed that earlier. He submitted a proposal that was very vague, asking for a half a million dollars and with no specifics in it, and we would not fund it.

Q. The question is why?

A. As I say, it was a very vague proposal. How can you fund something if you don't know the specifics of the experiments, what he plans to do with the money. I mean,

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through my experience at the universities in submitting a proposal, you give details of what you are going to do with the money or what experiments you are going to do, what dates and that sort of thing. I mean, usually that is the norm at the universities.

Q. Did the Joint Venture ask for a more specific proposal?

A. I think they did. I can't recall exactly.

Q. But –

A. I think they did.

Q. Why do you think they did?

A. My opinion is they wanted a more detailed proposal of what he plans to do in the study.

Q. My question is why do you think that. Do you remember that or are you assuming that or what is your basis for your assumption, if you are assuming?

A. From my general recollection.

Q. Do you believe Brown & Williamson is concerned that other tobacco

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companies will develop reduced ignition propensity cigarettes before it does?

A. Until you have a valid test method, I don't see what you call a low ignition propensity cigarette. I cannot define this term until you have really valid test method.

Q. So does that mean your answer is it is not concerned?

MR. PATTON: I am going to object on grounds of the lack of foundation, but you may answer.

A. And I repeat, unless you have a valid test method I don't see how you can say this is a low ignition propensity cigarette.

Q. Is there any concern, therefore, at Brown & Williamson regarding whether Brown & Williamson's competitors are developing or will develop such a cigarette?

MR. PATTON: I'm going to object unless you lay some foundation. I think you are asking one thing, and I think he is talking about his personal way of looking at something. I don't think we're getting --

A. I look at it the same as

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what I answered. Unless you have a valid test method, how could you say this is a low ignition propensity cigarette.

Q. Has anybody at Brown & Williamson ever expressed in your presence any worries about where its competitors stand with regard to developing more fire safe cigarettes?

A. Still I disagree with what you call a fire safe cigarette unless you have a valid test method you cannot come out and say it is a fire safe cigarette.

Q. I think you can be able to answer the question with that disagreement.

A. With that disagreement, as long as no valid test method, I don't know what you mean by a fire safe cigarette to compare it to. Nobody said anything to me, no discussions.

Q. Can you describe for me the deadlines that you are given internally for your work, whether you have any deadlines?

A. When we have project plans, we have, yes, deadlines and when to meet those project plans. I have an assignment on a certain project and I think I can accomplish it

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within that time frame.

Q. When did you start to receive those time -- what do you call those papers?

A. Project plans.

Q. When did you receive your project plans. Did you receive them at American Tobacco or Brown & Williamson only?

A. When I joined Brown & Williamson.

Q. You never received such plans at American Tobacco?

A. I haven't seen any plans at American Tobacco.

MR. PATTON: By project plans you are referring to a specific format of document that I think was marked as an exhibit earlier either in this deposition or in Tilford Riehl's deposition; is that correct?

MR. READ: Yes, and now let me make it more general.

Q. When you were at American Tobacco were you given deadlines for when certain projects should be completed by?

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A. I understand there was project plans with my boss, and I had certainly worked on a project, and we have some time frames to work on, yes. It was not maybe written in front of me, but we have to accomplish the work in a speedy way.

Q. As far as you remember these plans, these deadlines for your project's work were not written; is that correct?

A. At American Tobacco I can't recall seeing any written project plans in front of me.

Q. Or any other paper that would list deadlines and due dates?

A. I don't recall seeing that.

Q. The oral deadlines you were given, were they of the type to complete, you know, your smolder burn studies within the week or were they of the type by the end of the quarter complete the research, or by the beginning of next year. Can you give me a sense of what type of deadlines you had?

A. The smolder rate, for example, on fabrics. I was thinking about this

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idea and I started to work on it. I started out putting the deadline on myself to expedite the matter as soon as I can. There is no formal agreement saying by the end of the month you have to finish this or that. Do the work and as fast as you can.

Q. Is that fairly typical of how the process, deadline process works?

A. At American, yes, that was my understanding.

Q. I may have asked you this before, if I have I apologize. But is there any test method work that you have done since the formation of the Joint Venture that you would regard as being separate or independent of the Joint Venture?

A. I can't think of any.

Q. What would you say is the level of -- let me go back to the deadlines. When you were in the Joint Venture were any deadlines set by Dallas Pinion, as chairman of the Joint Venture, or other members as to when projects would be due?

A. I can't recall. You will

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have to go to the minutes or notes to find that. Off hand, I can't recall.

Q. Do you recall, other than Dallas, anybody setting deadlines in the Joint Venture meetings?

A. I can't recall.

Q. What would you say is the level of expertise with regard to ignition propensity of the other cigarette companies, meaning Philip Morris, RJR, Lorillard and Liggett?

A. I don't know.

Q. From having worked with them in the Joint Venture you don't have any --

A. I don't have any sense, no.

Q. No sense of their expertise?

A. No.

Q. Do you have any sense of their attitudes toward the development of low ignition propensity cigarettes?

A. As scientists from different companies in the Joint Venture, everybody, I think, was committed towards that goal.

Q. Were there any individuals

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that were more committed than others?

A. I cannot say that, I don't know.

Q. In your experience were they all equally committed or you have no basis to know?

A. I have no basis to know.

Q. This is in spite of your work through the Joint Venture over the last four years?

A. Yes.

Q. Did you view in your work through the Joint Venture that some of the companies had a quicker pace as far as their research in the ignition propensity area?

A. I cannot talk about other companies because I don't know. I have no basis for any comparison of what they do or how they do it.

Q. Were there any companies that were generally slower or later in getting research in or in doing projects?

A. I still don't know. I can't answer that, how they did things or how they do

things. I cannot answer.

MR. READ: Let's take a break for lunch.

(Break for lunch.)

(Wanna Exhibit 27 was marked for identification.)

Q. Back on the record after lunch, Dr. Wanna, we've marked Exhibit 27 to your deposition. Is this the type of time line you were referring to earlier?

A. For Brown & Williamson, yes.

Q. Do you know when Brown & Williamson began to create such a time line?

A. No, I don't know.

Q. On the first page, the first project talks about the current B&W version of a NIST test method. Can you describe to me what that is?

A. When we went down to the labs at Brown & Williamson and they were using a mock-up that consisted of the wrong dimensions compared to what NIST specified. It was 6 inches by 3 inches by one inch thick, and the NIST test method as they proposed it, the

mock-up should be 8 inches by 8 inches by two inches thick. And so there was a difference.

Q. That was the only difference?

A. As I recall, yes.

Q. I take it the size difference gave different results?

A. Yes.

Q. Do you know why that is?

A. No.

Q. As a scientist what are your theories?

A. The theories that I have heard should be contrary. It should be that what we have seen from the experiment is the larger mock-up gave more ignitions compared to the small mock-up. And explanations point to it should be the other way around in terms of heat sink effect and so on. I have no explanation. I am trying to come up with something. I keep thinking about it in the back of my head, but I have not been successful so far.

Q. Is there any sense of how thick foams are in the real world?

A. You asked a question when I was collecting upholstery fabrics, I asked one upholsterer what thickness he used, and he said about 4 inches thick foam. I mean, whether it's his standard or he uses that, it seems to me it is maybe right, 4 inches thick.

Q. As a result of your findings with regard to the thickness of the foam, is Brown & Williamson retesting the cigarettes it has been making for product development purposes?

A. For product development work they did some testing, usually the smaller size. We went back and retested some of the other ones on the newer, larger mock-up. Yes, we tested some of them, not all of them.

Q. In the future will Brown & Williamson be using the larger size?

A. Was it is now, what NIST proposed we'll be using that.

Q. Looking here at Exhibit 27, I take it from your earlier testimony that American Tobacco never made time lines similar to this; is that correct?

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A. What I said earlier is I have not seen them in front of me.

Q. And have you ever seen similar time lines in the Joint Venture as to Exhibit 27?

A. I don't recall seeing anything like this in the Joint Venture.

Q. The time lines referred to -- the deadlines referred to on Exhibit 27, have those deadlines been met, those for which the dates have passed?

A. Yes, I try my best, it reflects on my job performance, to meet them unless there is extreme things that come up that distract me from doing the work.

Q. Have you met the deadlines related to this first project?

A. Yes. You mean --

Q. Or did you meet them, I take it?

A. For the version, current B&W version of NIST, yes, I have finished that.

Q. With regard to Exhibit 27, to prepares the deadlines or decides what are

the appropriate deadlines?

A. I have the input on, you know, what is a reasonable time to finish the project.

Q. Who prepares Exhibit 27, is that something that you prepare or Chris Cook or somebody else?

A. Chris Cook prepares the final version.

Q. And you give input on the dates but he sets them as a final matter; is that fair?

A. We agree and we talk about the dates and we come to a conclusion this is a fair date.

Q. When you finished your first project about the B&W version of the NIST test method, did you issue a written report?

A. I recall issuing a report on the study, yes.

Q. It is probably in the boxes we got over the weekend.

(Wanna Exhibit 28 was marked for identification.)

Q. Turning to Wanna Exhibit 28 which has been marked, can you describe for me what this exhibit is?

A. Let me read it. (Witness reads exhibit.) I can't recall the context of this or who prepared it or if I prepared it or not. I can't recall.

Q. Is this a -- would you call this an agenda or a to-do list or something along those lines?

A. You might characterize it as a to-do list. I don't know how to characterize it. It is some ideas written down, I don't know.

Q. Is this a type of document that you generally create at Brown & Williamson?

A. No.

Q. So this is kind of a one-shot deal?

A. I don't know what you mean by an one-shot deal. It could be some notes. If I prepared it, it could be some notes that I prepared for myself. That is the extent of it.

Q. So it is not a standard

practice?

A. No.

Q. Do you recall why it was prepared?

A. I can't recall why it was prepared, no.

Q. Let me ask you, Dr. Wanna, if you recall whether CORESTA did a test protocol for laboratory variability study sometime after June of '94?

A. CORESTA interlaboratory study.

Q. No, it's actually titled Test Protocol for Laboratory Variability Study, and I believe it is something to the effect that one cigarette would be used on one substrate over a period of time.

A. Yes, I recall that.

Q. Can you explain, you know, I have just seen the document today for the first time. Can you explain that study to me, what the results were?

A. It was a study that some participants of the CORESTA Task Force agreed to

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do, pick up a fabric and pick up a cigarette and do multi-replicates over a week's period and see intralaboratory variations, how does it change.

Q. How does the test change over time?

A. In the same lab, the results, how the results change over time in the same lab.

Q. And what was the -- what were the results of that test?

A. Without having them in front of me, I have to go back and read it. From recollection it showed reasonably good agreement in the same lab. They could not compare it among labs because of the few numbers who participated. But there are some questions brought up as to why some labs there was more variability and one lab showed consistently, and they didn't know whether there was a flaw in the way they performed the test or some other variable they didn't account for. That is what I recall.

Q. Do recall which labs participated in this CORESTA study?

A. I can't recall. I know R.J. Reynolds and Philip-Morris, Ecusta and Lorillard. Maybe I missed one.

Q. Did Brown & Williamson participate in the study?

A. Not to my knowledge.

Q. Why did Brown & Williamson opt out?

A. That was the time before I joined them, I don't know.

Q. Did American Tobacco participate in this study?

A. No.

Q. Why did they opt out?

A. I don't know an official reason for it. When I saw the protocol I didn't see very much value in the whole experiment.

Q. What was the value that the proponents saw in it, as you understand?

A. From reading the objective in the protocol, as I recall them, I may not be very accurate, is to look at intralab variability.

Q. And what has been learned as

a result of this study that would be applicable to test method development?

A. I don't know how can you translate that to an -- eventually when you have a test method you have to look at inter- and intralab variability no matter what happens.

Q. And do you know if there was ever a published report on this?

A. I don't know.

Q. If there is, I am sure we will see it some day.

Q. Let's mark Exhibit 29.

(Wanna Exhibit 29 was marked for identification.)

Q. Dr. Wanna, can you tell me what Exhibit 29 is?

A. It is my notes from a Joint Venture meeting.

Q. Which meeting?

A. Joint -- cigarette ignition propensity Joint Venture meeting that occurred in Washington, D.C., on June 13, 1995.

Q. How frequently is the Joint Venture meeting nowadays?

A. You'd have to go back and count the minutes. We are meeting about the same pace that we used to meet. I can't keep track of it without going back and counting them.

Q. Do you have a ballpark sense of how many times it has met in the last year?

A. My sense of it, they were meeting like every two months, every four -- every month and a half.

Q. And do you attend all of the meetings now or just some of them now?

A. I try to attend most of the meetings unless I am out of town on some other business or something else going on.

Q. How did the Joint Venture change when the acquisition of American Tobacco took place, if at all?

A. In my sense it didn't change much, except now Dallas Pinion represents Brown & Williamson and Hugh Honeycutt still attends and I attend.

Q. Is Dallas Pinion still the chairman?

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A. Yes.
Q. There is a reference here under Factory Mutual to a fellow named Archibald Tewarson and a report he gave. Can you describe to me the report he gave and what the rule is of Factory Mutual and this whole ignition propensity project nowadays?
A. It's a very broad question. When NIST came up with their proposed test method they tested some commercial cigarettes and they claim six of them to be fire safe cigarettes. In our lab we got some commercial fabrics and we tested those six that NIST claimed after identifying them by name as fire safe, and we chose five common brands from the top ten best sellers and we tested them on commercial fabrics and we found there's no difference on commercial fabrics according to the NIST test method, both about the same in terms of ignition propensity according to the NIST test method but using a commercial fabric. We wanted to validate the data at another outside lab and Factory Mutual was chosen and did the same experiment, and Dr. Tewarson came

and gave a report on it.
Q. First, as I understand it, American Tobacco did a testing of the six brands NIST said were less ignition prone and then five of the brands that NIST had tested that weren't so low in ignition propensity, correct?
A. NIST did not name the other four -- I think fourteen brands they tested that were said the common cigarettes or best sellers. They didn't name them, we just chose five, I guess off the shelf, you might say.
Q. Why did you choose the five you did?
A. I don't know. I did not chose them myself, so I don't know. I can't say what the reason was.
Q. Who chose them?
A. Dr. Pinion chose them.
Q. And did he say why he chose Marlboro over Pall Mall or however he did it?
A. I don't recall what are the brand names, but I don't know why he chose those.
Q. How were the -- and did

Factory Mutual use those same brands or did they use different brands?
A. Same brands that we tested in our lab.
Q. So you conveyed to Factory Mutual the same five popular brands?
A. Yes.
Q. Has Factory Mutual done any additional work besides this confirmation of this American Tobacco test?
A. Not to my knowledge, no.
Q. Let's mark Exhibit 30.
(Wanna Exhibit 30 was marked for identification.)
Q. Exhibit 30 has two dates at the bottom, July 26 and July 19, 1994. Would Exhibit 30 represent the contract between the Joint Venture and Factory Mutual Research to conduct this study you have just described?
A. I don't know if that is, you know, the contract. I am not up to date on, you know, what is considered to be contract or not a contract. Seems to me I got a copy of it for the scientific issues discussed here.

Q. But it is your understanding that after Factory Mutual presented its report testing these 11 brands over 25 popular fabrics or 25 commercial fabrics, that it has done no further work for the Joint Venture?
A. My understanding they haven't done any further work.
Q. When Factory Mutual research was retained by the Joint Venture was there any discussion in the Joint Venture meeting that the research Factory Mutual was engaging in was more of a type that would challenge the NIST method than of a type that would produce an alternative test?
A. My understanding why Factory Mutual was retained, we did this work at American Tobacco that showed NIST was wrong in claiming those six cigarettes are fire safe. On real world fabrics there is no difference between those six and other brands. And we simply wanted to make sure that our data can be duplicated at an independent research lab. That is my understanding. It's not to refute the NIST test method, just to show that the data

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committed on those commercial cigarettes from the NIST test method were flawed.

Q. Has Factory Mutual Research, is it going to publish a paper with the results of its study?

A. My understanding is yes, they might publish a paper. I am not up to date on what the process is now up to.

Q. Has the Joint Venture asked them to publish a paper?

A. From my recollection yes, they asked them to -- encouraged them to publish it.

Q. Do you know how Factory Mutual selected the fabrics that it tested the cigarettes on?

A. I was not directly involved in the selection of the fabrics that they tested.

Q. Did they use the same fabrics that American Tobacco had used or did they procure their own fabrics?

A. They procured their own fabrics from, I think, the Boston area, I am not

sure. But they didn't use the same fabrics, no.

Q. Who is Mike Morton?

A. Mike Morton, I think he is a statistician at R.J. Reynolds.

Q. Let's mark Wanna Exhibit 31.

(Wanna Exhibit 31 was marked for identification.)

Q. Can you deal me what Exhibit 31 is, Dr. Wanna?

A. These are my comments to a submission by Dr. Michener to the ASTM for adoption of the NIST proposed test method by ASTM.

Q. Who did you work with, or did you work with anybody in preparing this exhibit?

A. No, I worked alone on it.

Q. Nobody edited this for you?

A. I reviewed it for -- somebody reviewed it for English editing. My English writing is not that excellent.

Q. Who reviewed it for editing?

A. Dr. Hugh Honeycutt and Henry

Oechler.

Q. I take it these are your major criticisms of the NIST test; is that fair?

A. Major criticisms, yes.

Q. And this is dated May, 1995?

A. Yes.

Q. Are there any changes other than perhaps more supporting data between your criticisms in May, 1995, and your criticisms that you had of the NIST test back in 1992 when you knew where they were going and in '93 when they more formally published their test?

A. Any differences, you say?

Q. Yes.

A. Between 1995 and 1992?

Q. Yes.

A. I can't recall exact comparisons between the two. There was the ruggedness issue of can you obtain reproducibility of duck fabric. It became more available after 1995. The issue of foam, grappling with that issue, whether you can buy reproducible foam is another issue that we are looking into. So those two major issues, I

think, really appeared later on.

Q. I may come back to Exhibit 31. Let's mark Exhibit 32.

(Wanna Exhibit 32 was marked for identification.)

Q. Can you describe to me, Dr. Wanna, what Exhibit 32 is?

A. This, I think, occurred after I joined the company. I was transferred down to May 1 to join Brown & Williamson --

Q. Yes.

A. -- in Macon on a permanent basis, so this appears to me some kind of a summary somebody prepared on some prototypes that they developed.

MR. PATTON: Maybe it would be helpful to know if he has seen this before or if he is just interpreting it as he looks at it right now.

Q. Have you seen this document before?

A. I may have seen it before. I can't recall the exact context. When I first came down I may have seen it or attended a

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presentation where it was distributed, so --.
Q. What do you regard as the --
or what does Brown & Williamson regard as the most promising areas of product development with regard to ignition propensity?
MR. PATTON: Objection, foundation.
A. I cannot answer that. I am not very much involved in the product development group down there.
Q. How much involvement do you have exactly?
A. Since I have been down there I attended a few meetings with them, a couple, two or three meeting.
Q. Have you burned any cigarettes for them?
A. Let me clarify that and know what you mean by burned cigarettes for them. If you mean if they developed some prototypes and they asked me to test them under the NIST proposed test method, yes, I have done that. But that is the extent of it.
Q. Have you had any input on

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what design changes might be fruitful in order to have a cigarette meet the NIST test?
A. I don't recall having any input onto them except from what I experienced at American Tobacco, some changes.
Q. At the meetings you have attended, what has been the -- what are generally regarded as the more promising avenues of product development with regard to producing a low ignition propensity cigarette?
A. Still at those meetings I have no really concrete evidence of most promising, they were doing all their testing on a 6 by 3 mock-up, and I considered that was a flaw and all of the data, in my opinion, is meaningless.
Q. Since since you have discovered the flaw, what -- I take it you have retested some cigarettes for them?
A. We tested some prototypes, yes.
Q. Which are the prototypes you retested?
A. Unless I go back to my

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notes, but from my recollection we tested some prototypes that have bands on them, some with low filler chalk, I would say, some with coal fillers. That is what I recall.
Q. What were the results when you ran them on a NIST test with the appropriate size fabric or foam?
A. When I ran them on the NIST proposed test as it is proposed in the current version, the coal fillers and the reduced fillers, I didn't think they fared well in terms of they gave more ignitions as compared when they tested them on the smaller mock-ups. Some of the bands, they self-extinguished even when in the vertical position according to the test method as it's supposed to be tested.
Q. So did any of the banded papers achieve a 60 percent pass rate, pass being either they self-extinguished or didn't ignite the fabric?
A. I don't recall the exact numbers.
Q. Is there a goal at Brown & Williamson to have the cigarettes obtain 60

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percent either self-extinctions or non-ignitions?
A. I haven't seen that goal, nobody mentioned it me and I don't know how you assume 60 percent. Nobody says any cut-off point, this is 60 percents or 50 percent, I don't know.
Q. What is your understanding of how the prototype cigarettes are to fare under the NIST test as far as Brown & Williamson is concerned?
A. I don't have an understanding.
Q. You just give the results?
A. I just do the testing and give them the results.
Q. At American Tobacco did you have more involvement in product development efforts?
A. Yes, at American I did have more.
Q. When you left American Tobacco what -- or at the time of the acquisition what learning did American Tobacco

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take to B&W regarding product development, with regard to this ignition propensity issue?

A. The learning that we gave them was an accumulation of the data we had at American Tobacco and submitted to them, just gave it to them.

Q. Were there any promising prototypes that American Tobacco was working on that you brought down, any particular types of cigarettes?

A. I don't know what you mean by promising. We looked at different things and we gave it to the product development people here, which they might pick up some stuff that we picked up. There was the common thing of bands that they're looking at, and low filler chalk, coal fillers, some of the stuff we had been doing, they had been doing.

Q. Was there anything that American Tobacco had been doing that Brown & Williamson wasn't?

A. I cannot attest to that, say anything towards that effect because I don't have all of the information that they had been

doing at Brown & Williamson all along, what they tried, what they did not try. I don't know.

Q. To the extent you know, was American Tobacco looking at any avenue of product development that Brown & Williamson wasn't at the time of the acquisition?

A. No, I am not very familiar with the Brown & Williamson development efforts so I cannot really have a fair comparison. I cannot judge it.

Q. At the time of the acquisition did you hear anything like that is an additive that we haven't not thought of, or that is a way of doing things we haven't thought of.

A. I didn't see any of those comments.

Q. On the other side, at the time of the acquisition in the cigarettes you've tested, have you seen any ideas that American Tobacco wasn't using, special additives or treating ideas?

A. What I have seen from Brown & Williamson's prototype, I think we might have

tried all of them at American, but I cannot be dead sure of, it is a guess. We tried most of them, maybe.

Q. How much of the product development that American Tobacco was doing was the result of the paper companies such as Ecusta delivering specialty papers and saying try this?

A. How much effort was from paper companies like Ecusta or Kimberly-Clark?

Q. Yes.

A. I cannot sit down and break it unless I have the data, how many samples they submitted and how many samples we came up with. We worked together like sometimes I requested samples from my own ideas, and they think of something and they submit the samples. But it is difficult for me to sit down and break it how much is percentage-wise from Ecusta or Kimberly-Clark and how much is our ideas.

Q. I know it's difficult to give me a precise percentage, but can you give me a ballpark estimate of how much was requested by you from the paper companies versus how much was sent by the paper companies to you to test?

A. It would be unfair to make any number up. I would be making a number up. There is so many samples I just can't break it down, really.

Q. Do you have a sense of which one was the greater, whether there was more that came from the paper companies originally versus more in-house?

A. Still I cannot really have a sense of which one was greater. It would be a judgment call and I am making a judgment call which may not be true.

Q. So you have absolutely no sense, that's your testimony?

A. That's my testimony is that I don't have an accurate number, and which also I don't have a sense of which was greater. Samples were generated from both sides. I know more samples came from Kimberly-Clark. Ecusta, we worked with them and they submitted some samples, but on general if you compare Kimberly-Clark with Ecusta, maybe we got more samples from Kimberly.

Q. But you can't compare how

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many samples from those two combined versus American Tobacco internally?

A. No.

Q. And at Brown & Williamson do you have any sense of how much of the product development work are papers that the paper companies send to Brown & Williamson with a "try this" approach?

A. I have no sense of that, I don't know.

MR. READ: I have no further questions. Before I close, Steve, we did, just for the record, receive four boxes this weekend which we received for Dr. Wanna's deposition. To be fair, though, we have not reviewed them as thoroughly as we would like. I will not officially close the deposition, but I don't intend to call Dr. Wanna back in an unwarranted fashion. I know you have worked hard to get us the materials and we have read them, and I don't think we'll need to call Dr. Wanna back, I just want to leave that open.

MR. PATTON: I'm going to respond briefly to that because I hope we don't

reach an impasse on that. The CID for documents came a number of weeks after you scheduled these depositions. We did not receive those until, what, ten days ago, something like that, perhaps even less. We reacted almost immediately to try to pull these documents together per your request so that you can have them in advance of the deposition, and really made Herculean efforts to do that, with the entire idea that that would prevent the need to either, one, reschedule the depositions or, two, would avoid a need to redepose these witnesses having taken their time, energy and effort already.

This is the first that it has ever been suggested in any of our conversations that because you subsequently asked for documents we tried to get them to you so you would have them before the depositions, that this might be only the first of two bites of the apple. So I am not committing, we have been real cooperative with you, but I am a little surprised by that statement.

MR. READ: I know the documents were produced on a short time frame,

and I suspect we are probably talking about a moot point, but I just wanted to preserve our options and you can certainly preserve yours, and if we ever need to we can discuss it at that time. Thank you for your testimony, Dr. Wanna, and this is it for today.

A. You are welcome.

MR. PATTON: Do you want him to read and sign?

MR. READ: Yes, I would like him to.

STATE OF KENTUCKY)
) ss
COUNTY OF JEFFERSON)

I, ALICE J. BALLARD, Notary Public in and for the State of Kentucky at Large, do hereby certify that the foregoing testimony of JOSEPH WANNA was taken before me at the time and place as stated in the caption; that the witness was first duly sworn to tell the truth, the whole truth, and nothing but the truth; that the said proceedings were taken down by me in stenographic notes and afterwards transcribed under my direction; that it is a true, complete and correct transcript of the said proceedings so had; that the appearances were as stated in the caption.

WITNESS MY SIGNATURE this the day of December, 1995.

MY COMMISSION EXPIRES: August 14, 1996.

ALICE J. BALLARD
Notary Public
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I, JOSEPH WANNA, do hereby certify that I have read the foregoing sworn statement and that my testimony contained therein is true, accurate and complete, to the best of my knowledge and belief, with exception to the changes listed below:

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COUNTY OF

Signed and sworn to before me this _____ day of _____, 1995.
My commission expires:

_____
Notary Public

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